



WINTER 2007

# THE CHRONICLE

**SSC Charleston  
innovates  
for the  
warfighter**







*The Chip Scale Atomic Clock innovation team, front row, from left, George Lunney, Robert Miller, Charles "Everett" Dantzler and Joseph Torres; back row, Dr. Stephen Jarrett, Robert Czarniecki and Steve Richards . Not pictured are James Polk, David Monahan and Andrew Kinard. See story on page 30. Photo by Harold Senn.*



# Inside

Winter 2007

Vol. 13, No. 1

## 10 *The Night Crew*

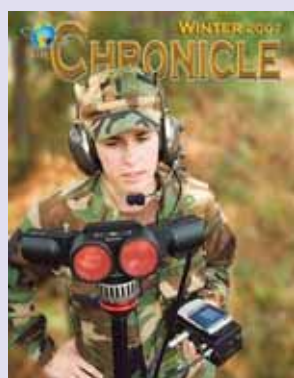
SSC Charleston team takes its expertise to the warfighter.

## 24 *Fair winds and following seas*

End of fiscal year brings greener pastures to retiring federal civilian employees.

## 30 *Innovators*

Program offers opportunities to those willing to think outside the box.



### On the cover

Naval Reserve Lt. j.g. Stephanie Dudley, (CEC), who as a civilian works in Code 614, uses LightSpeed to communicate. LightSpeed was the subject of one of SSC Charleston's 13 FY06 innovation program teams. See story on page 30. Photo by Harold Senn



Page 11

Captain's Call .....	4
From the Executive Director .....	5
Common Submarine Radio Room .....	12
Cold War Heroes .....	16
'Geo-enabling' Kosovo camp .....	20
Celebrating Cultural Diversity .....	28
Supporting joint interoperability .....	36
Rear Adm. Bachmann visits Code 80 .....	38
SSC Charleston bicyclists on a roll .....	43
CVN-71 inspires respect, pride .....	47
SSC Charleston hosts VIPs .....	52
The final word .....	54

**SPAWAR**



**Systems Center Charleston**

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Commanding Officer ..... Captain Red Hoover  
Executive Director ..... James Ward

### SSC Charleston's Mission

To provide knowledge superiority to naval and joint warfighters and peacekeepers through the development, acquisition and life cycle support of effective, integrated Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) systems.

## The Chronicle

Editor ..... Susan Piedfort  
Photographer ..... Harold Senn  
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# CAPTAIN'S CALL

## CAPTAIN RED HOOVER, USN SSC CHARLESTON COMMANDING OFFICER

In the last few months I have enjoyed seeing first-hand how we are innovating and leading the way in affordable readiness and customer satisfaction here at SSC Charleston.

One area in which we continue to mature is in our role as In Service Engineering Agent (ISEA). The conclusions drawn from our recent ISEA survey will be instrumental in our continuous effort at process improvement, and I am thankful to those who gave us input through the survey. Further, the collaboration between our ISEA Next team and the NAVSEA Warfare Center's Next Generation In-Service Engineering (NGISE) working group has resulted in a sharing of ideas and strategies that will enable the right readiness to the fleet at the right cost.

Our folks are working across the systems commands to find innovative solutions to challenges we will face 20 years down the road, including provisioning a "virtual ISEA presence" through smart boxes that will enable remote monitoring, self-correcting systems and automated prognostics. These capabilities will be a great investment by optimizing shipboard manning levels and eliminating the need for a technician to physically visit a ship, submarine or shore activity.

Lt. Cmdr. Dean Barsaleau's participation in the Surface Warfare Enterprise (SWE) Technical Assistance Barrier Removal Team (BRT) effort is another example of our teaming with our stakeholders to find innovative solutions to existing and future challenges. This effort will enhance collaboration among the Regional Maintenance Centers (RMCs), Distance Support (DS) centers and ISEAs, while eliminating waste and variation in the entire technical assist process.

We are also challenged with the CNO priority of establishing a C4ISR "Single Fleet Driven Readiness" metric. This is no easy task, so we need everyone's ideas and support as we work with the NNFE team to establish the C4ISR fleet readiness metrics.

One mechanism that will communicate the status of technical assists across the Navy is the Remedy database that is updated any time technical assistance is provided. When an issue is turned over to the ISEA from the RMC, the ISEA can see the history of the problem in this database. This

tracking method allows us to identify redundancies and bring increased visibility to long-term issues. If you are providing fleet technical assistance and not using Remedy, now is the time to get on board.

All of these efforts will allow us to remain a leader in supporting operations, maintenance, upgrades and modernization of our C4ISR systems — capabilities that are vital to the warfighter today and tomorrow. I am proud of our folks' contributions to these teams. Look for more news of their efforts in upcoming editions of *The Chronicle*.

Another significant success in enabling future warfighter readiness came in September with the Open Architecture/FORCEnet (AO/Fn) experimentation demonstration. A team led by Ken Ballard is playing an integral role in improving interoperability across the various domains, which use different "languages" for various tactical and operational systems. For example, a surface craft may be tracking a contact of interest that is not seen on the situational awareness display of a nearby submarine, preventing them from sharing resources during an interdiction.

Using a hybrid of two different data models, the team created a Web-based network that successfully brought together data from across these different domains. During the AO/Fn experimentation demonstration, SSC Charleston was the first node to do this successfully over the global information grid (GIG). Providing a two-way exchange in this distributed environment between combat systems and C4ISR can result in reduced infrastructure on ships, less training, and reduced manning.

By successfully improving interoperability across the various domains, the team provided great insight into the architectural aspects of this evolutionary process. For more information on the AO/Fn experimentation demonstration, see their story on page 27.

As we continue to meet our mission objectives of delivering and supporting fully integrated, interoperable information technology systems and software to our customers, I want to stress the importance of following sound systems engineering practices. This goes beyond what we

*Continued on page 38*



*From the desk of*

***James D. Ward***

*Executive Director*

## **CAO ... *it's about innovation and stewardship***

CAO — you might have heard of it recently. CAO is short for Competency Aligned Organization. It redirects organizations away from their traditional vertical orientation and in its place deploys a network of teams across the enterprise. In doing so, CAO retools the way collaboration is applied in solving problems and capitalizes on all competencies wherever they exist. It also helps apply resources in a more targeted, evidence-based and cost-effective manner.

How will competency alignment affect our organizational charts? What does it mean to you? What are we trying to fix? Why is your Executive Director spending so much time in San Diego working on this CAO initiative? Those are some of the questions I have been asked recently.

Being competency aligned is not about organizational change as defined by shuffling the deck chairs. It's about innovation and stewardship, and creating a better operational culture for our employees and customers. It's about creating customer value through a shared mission by pulling together employees who transcend individual competencies, professions, client bases and capability areas.

And it's about connecting Team SPAWAR differently to create more value. CAO will retool the way we collaborate and develop ourselves across Team SPAWAR to produce more capability at a lower cost. This is so important to us that we are going to be very purposeful in how we go about implementing competency alignment.

This cross-teaming capability is necessary to respond to the needs of the Naval NETWAR FORCEnet Enterprise (NNFE) and with the Navy Undersea, Surface, Aviation and Expeditionary Enterprises to satisfy the demand signal from the Type Commanders to achieve mission success. Quite simply, the money needed to operate old, vertically aligned organizational silos is gone.

In the business environment, the book value of a company is based on quantitative factors such as profits, debts, assets and liabilities. The market value of a company is based on its book value plus intangible factors, such as intellectual property, which the market believes are indicators of potential success.

In my opinion, Team SPAWAR is undervalued by the market. Our value is not well understood. Why do I believe

this? Primarily, because we have not fully told our story or exploited the value from two of our greatest intangibles — our workforce competency and our diverse client base. Our diverse C4ISR client base is a valuable resource that is untapped in respect to producing a net effect. The value of cross-client interaction in a like domain is not being exploited. For example, our major technical departments have different clients and sponsors in the medical community that are all individually trying to solve the medical challenges of our warfighters through information technology solutions.

Pulling our folks and potentially their sponsors into a community of interest, or mission area team as NAVAIR would call it, would give them and us a completely different awareness that would enable alignment of resources on the commonalities. Such cross-boundary interaction throughout the SPAWAR claimancy would increase our ability to develop and harvest innovative and relevant solutions, while aligning our resources to deliver capabilities and services to all of our customers and lower their individual costs.

Another example is the work we are doing across Team SPAWAR with operations centers. We are individually working on Homeland Security Operations Centers (HSOCs), Navy Regional Operations Centers (NROC), secure Navy Operations Centers (NOC) and Maritime Headquarters with Maritime Operations Center (MHQ/MOC). By leveraging and accessing these multiple clients in this same command center domain, we have the potential to increase individual capability, increase interoperability across the domain and reduce cost. There is untapped value here in this area that we haven't taken advantage of. This Mission Area Team (MAT)/Community of Interest (COI) interaction is the key to increasing our market value over our book value.

A competency-aligned organization is about aligning capabilities with competencies differently than they have been aligned in the past. Do we have to move all these like projects to a single code to accomplish this? I hope not, since we are at an organizational maturity that will enable us to bring our individual contributions to the table without having to posture on who is in charge!

*Continued on next page*



## *From the Executive Director*

*Continued from previous page*

The beauty of the CAO concept is that it is scalable. For instance, the work we are doing here with the medical community is also relevant to ongoing efforts at the Aviation and Surface Enterprises. Collaborating with them will result in a better outcome for customers and the warfighter collectively. Team SPAWAR has the potential to become the force multiplier that the Department of the Navy needs us to become.

A CAO construct will blur the lines between organizational entities. As interaction occurs, relationships and interdependencies will form. We are doing this to a degree now, but we need to do it more. We are seeing the value of this cross-boundary interaction with our branch heads. Providing the opportunity for branch heads to get together on a regular basis has greatly increased the level of interaction across our organizational entities and has produced the kind of benefits a CAO offers. No customer pays for these branch head meetings, but many of our customers are already reaping the benefits of the interaction that is occurring at these gatherings and the innovative thinking that results.

I have principally witnessed innovation occurring in two environments, one in which you assemble a group of diverse competencies together and assign a challenge, and secondly, when there is such a scarcity of resources that you are forced to innovate. Not having all the resources you need forces you to be innovative and to find a solution. The Department of the Navy needs more of these innovative capabilities at lower cost.

Eventually, you get to the place where, if I have three or four people and a job from a customer, and I need a few extra people, and a certain business unit has some people that are not fully employed, I can tap into that expertise. And I can do it seamlessly and invisibly, if you will, to the customer. Now we're not there yet. We have many things that have to be sorted out. Competency alignment will allow us to locate shortfalls and excesses in skills, distribute them efficiently, and achieve a balance to meet customer requirements.

Years ago, one of my sons decided he wanted a motor-

cycle with a sidecar. His mother and I immediately vetoed this idea for a variety of reasons. Limited budgets aside, he was only 11 years old. Well, unbeknownst to us, he wandered off to the garage and began to tinker. Later that day, we were in the front yard chatting with a neighbor when our garage door opened. We turned to see our son pedaling out on this contraption that consisted of his bicycle, a clothes hamper he had attached to the bicycle rear axle, and a skateboard he had attached to the bottom of the hamper.



He had his little brother stuffed in the hamper for the first test run of his make-shift sidecar, and both boys smiled gleefully as they rolled down the driveway. They were the envy of all the neighborhood kids. We had to make him dismantle that thing for safety reasons of course, but I must admit, I really admired his innovative thinking.

In today's fiscally constrained environment, the defense budget is not adequate for all of its requirements. And it's not going to get any better. So all of us are going to have to use all our creativity, that technical initiative and innovation, to try and find places in which we can contribute to, and sustain, the readiness of our forces for less money.

We have to be responsive to our customers, all of our customers. That doesn't mean that we give up our technical integrity and provide the answer that somebody wants to hear, as opposed to the answer that's correct. It means that we are responsive to the demands of the customers, to produce the results that are technically correct and of high quality. That's what people are paying us to do, that's our stewardship role.

We are in the midst of the beginning of the operation of a CAO-type organization. I'd be the last person to tell you that I thought we had it all figured out and that everything was okay, just running along and things are all in great shape. I think that, like any change, it has positives and negatives. But much of how we make it work depends on the people that are trying to make it work. The ultimate vision is that we can work seamlessly across Team SPAWAR.

The future belongs to those willing to transform boundaries. Better yet, folks willing to innovate are postured to be tomorrow's leaders.

## ***SCN, JTWS projects reach CMMI® Maturity Level 3***

SSC Charleston's Shipbuilding and Conversion, Navy (SCN) Program and Joint Threat Warning System (JTWS) Program have been formally appraised at CMMI® Maturity Level 3, becoming the second and third SPAWAR projects to reach this crucial milestone.

Both projects underwent rigorous formal "Class A" Standard CMMI® Appraisal Method for Process Improvement (SCAMPI) appraisals from Oct. 30 to Nov. 3. The apprais-

als were led by a Software Engineering Institute (SEI)-authorized Lead Appraiser.

"Congratulations, I know how much work this is," said Mike Kutch, Director of Engineering Operations (Code 09K), during the Final Findings presentation. "Everyone deserves a hand, and we're still shooting for a Command-level appraisal in April."

*Continued on page 39*

# 'Grand Lady of NAVELEX London' passes

SSC Charleston personnel were saddened to learn of the death of Clara Gold Sept. 15 in England. She was 88. Those visiting the SSC Charleston London office since 1970 were most likely welcomed by "Miss Gold," as she preferred to be called. Known as the "London office icon," she had more than 53 years of federal service.

Born in New York to parents of Eastern European descent who had emigrated to the U.S., she moved to London with her family as a young girl. During the German bombing of London from 1940 to 1944, Miss Gold was a volunteer air raid warden. In 1944 she joined the U.S. Women's Army Corps (WACs) in the same building at 7 North Audley Street in London at which she later worked for 43 years.

Assigned to an Army photography unit during the war, Miss Gold went to Paris shortly after the city's liberation, moving east with her unit and was eventually stationed in Germany. In 1947 Miss Gold began her civil service career in Germany. Returning to the U.S. in 1954 aboard a troop ship, she stayed briefly in California before returning to England to help care for her sick mother.

She resumed her federal service career, and in 1957 she worked for Naval Facilities Engineering Command at their London office. She also worked for the Office of Naval Research in London.

An SSC Charleston plank owner, Miss Gold joined the Naval Electronic Systems Command (NAVELEX) Portsmouth family at the London office in 1970. As an office assistant for Code 632, Fleet Site Support Branch London for 30 years, she trained and supported eight officers-in-charge and seven residents-in-charge. She retired Aug. 31, 2000.

Many who worked with Miss Gold in England are currently with SSC Charleston and industry partners in the area. Mike Turner of Science Applications International Corporation (SAIC) recalled countless conversations with her. "During her service in the Army she had the thankless task of handling many of the photographs taken of the concentration camps," Turner said. "She was learning first-hand of the



Photo provided by Jim Andrewski

**Bill Richardson assists during a presentation to Miss Gold in 2000.**

atrocities that were taking place at that time."

Mark Rodgers of Code 822, worked with Miss Gold for six years. He added, "She was of European Jewish descent and was examining evidence proving that her relatives in mainland Europe were being deported and killed. Imagine having to keep that knowledge a secret from your family and friends while serving in the U.S. military stationed in England."

Bill Richardson of Scientific Research Corporation worked with Miss Gold in the London office from 1992 to 1998 and called her "an inspiration to us all." Her mental sharpness, he

said, was amazing. "If you took something from her desk, she could tell. She ran a tight ship. She was very attuned to current events," said Richardson.

"She read every issue of the *London Times* and *Stars and Stripes*," Rodgers added, "and occasionally I would notice she redlined errors in grammar or punctuation."

Despite living most of her life in England, Miss Gold was all American, with no British accent. "She worked with Americans every day. She would remind people she was an American," Richardson noted. She was also claustrophobic, a result of being forced into the subway "tubes" during the London bombings. "Even in her 80s, she'd walk down four flights and get the mail, then carry it back up," he said.

J.P. Keane, head of the London office, attended Miss Gold's memorial service Sept. 21 in London, speaking on behalf of all who worked with her. "She was a remarkable lady," he said. "Even after retirement, she'd come to our office most Tuesdays for a chat, always walking up the four flights of stairs."

Jim Andrewski of Code 57 first met Miss Gold in 1976. "I went to pick up my mail and she told me the mail would be put out after she sorted it and put it in the proper mail slots, and not to bother her anymore," he recalled. Over the next 30 years they became good friends. Until returning to the U.S. earlier this year, he and his British wife Cheryl were among Miss Gold's best friends and met with her regularly.

Andrewski noted that the same year the Navy closed the headquarters building at #7 North Audley, "we also lost a long-time resident of that building. I and all those who knew Clara will truly miss her. How wonderful it was to have Clara Gold touch our lives."

- Susan Piedfort



## Iraq Night Crew

SSC Charleston team takes its expertise to the warfighter

*An SSC Charleston/industry partner team is working with Marines in theater to perform final conversions and installations on Up-Armored Humvees (UAH) that have been modified with C4I equipment to help save warfighters' lives.*



*The Night Crew -- Staff Sgt. Jeffrey Callahan, Staff Sgt. Jason Dizon, Staff Sgt. Gregory Risen, Staff Sgt. Angel Caraballo, Staff Sgt. Jason Keys, Sgt. Thomas Soto, Sgt. Ganna Patten, Sgt. Jeffrey Perez, Sgt. Dwayne Richards, Kristan Bailey, Henry Palmer, John Brenner, Omar Coley, Albert Washington, Alex Harley and Matthew Sabback -- comes out during the day for a photo op.*





*At left, Omar Coley loads and tests C4ISR systems on a Humvee. Above, Kristan Bailey, second from right, poses with Master Gunnery Sgt. Giertz, Capt. Dickson and Maj. Gonzales from the Marine Corps Systems Command. Pictured below is a night crew work area.*

In July of last year the Marine Corps Systems Command asked SSC Charleston to modify the Up-Armored Humvees with a variety of special C4I and weapons equipment. SPAWARriors have extensive experience in the integration and fielding of Marine mobile radio communications and tactical data radio sets, sensors and the various SIGINT systems involved. A team of Code 616 personnel and several industry partners has been performing the installations of the C4ISR systems on the Humvees (M1114s).

Because of emerging technology in the area of counter improvised explosive devices (CIED), the UAH modifications on the Humvees allow for future upgrades. The radio installs done at SSC Charleston will also facilitate future upgrades without vehicle modification, allowing upgrades to be fielded directly to Marines.

The Marine Corps Systems Command recently requested SSC Charleston support for the final conversion and installation effort on the vehicles that have been shipped to the

*Continued on page 11*





*Above, a collection of “cans” served as home away from home for the night crew. At middle left, living conditions inside the cans, and above, a scorpion who shared the desert living space. At left, Martial Arts Instructor Sgt. Thomas Soto gives hands-on training to Staff Sgt. Gregory T. Risen on a knife disarming technique and a shoulder throw.*





*Continued from page 9*

war theater. Kristan Bailey of Code 632 returned recently from Iraq, and industry partners from Eagan, McAllister Associates, Inc., are still working there. With temperatures reaching 115 degrees during the day, the team does much of their work at night. Working far from home and in austere conditions, the team is motivated by testimonials from troops who credit the improved vehicles with saving their lives, according to Bailey.

“We worked together as a team to get this equipment to them as quickly as possible,” he said. “We want our warfighters to have everything they need to protect them as they carry out their missions.”



*Above, an Iraqi plane that had been buried in the sand offered a chance for some patriotic graffiti. At left, Kristan Bailey leaves his mark on the plane. Pictured below is the Marine Corps Systems Command compound.*



# Common Submarine Radio Room

U.S. submarines cruise the world's oceans unseen, the ultimate stealth weapon.

Among the *Los Angeles* (SSN-688), *Virginia* (SSN-774), *Seawolf* (SSN-21) and *Ohio* (SSGN-726) submarine classes, missions vary from antisubmarine warfare, antisurface warfare and special operations to intelligence, surveillance and reconnaissance. Communications requirements and system configurations also vary from boat to boat.

The need arose to develop a Common Submarine Radio Room (CSRR) that is standard across all submarine classes and allows full access to the Navy's FORCEnet to integrate warriors, sensors, networks, command and control, platforms and weapons into a networked, distributed combat force. Submarines require secure, strategic communications and must be able to receive large data file transfers, and to receive and transmit video, voice, facsimile and imagery while operating with combined and joint forces in the littoral regions.

The emphasis in CSRR is the word "common," and the challenge of designing, installing, testing and maintaining the "Common" Submarine Radio Room is a formidable one. Because of an established tradition of success in submarine communications going back to predecessor commands Naval Electronic Systems Engineering Center Charleston and the Naval Command, Control and Ocean Surveillance In-Service Engineering Center, East Coast Division, SSC Charleston was the obvious choice to team with other agencies to take on the formidable CSRR challenge.

Code 53's long standing history of doing submarine installation and testing on SSN-688 class submarines and the success SSC Charleston had with the complete shipboard (LPD/CVN) RCS integration within the secure Integration and Test Area (ITA) made the Submarine Integration Pro-

*SSC Charleston  
finds efficiencies  
in cost,  
integration,  
delivery and  
installation*



gram Office's (SPAWAR PMW-770, PEO C4I and Space) choice for CSRR an easy one. Tom Adams is credited with starting the CSRR standup in Charleston as the previous program manager. Now Code 53's David Bednarczyk heads up both the Submarine Communications Support System (SCSS) and CSRR programs as

the Submarine Communications Program Manager.

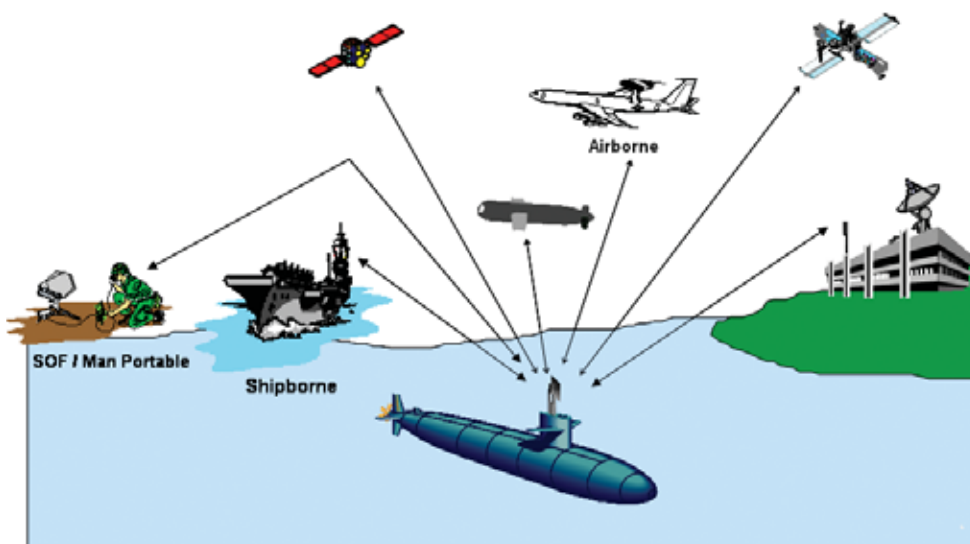
PMW-770 is the CSRR lead, and development was accomplished prior to the reorganization of PEO under PMW-173.

Partners include the Naval Undersea Warfare Center (NUWC) in Newport, R.I., serving as the technical design agent, and Lockheed Martin Tactical Systems, which developed the control and monitoring (C&M) software. SSC San Diego developed the system requirements definition and performs software development oversight. SSC Charleston's role is the production integration, acceptance testing, configuration and installation of equipment on the submarines.

"Code 532 has alteration installation teams (AITs) which go on board and rip out the existing IR2. The racks are brought to Charleston, stripped, refurbished and put together with the new requirements," explained Bednarczyk. Code 531 provides most of the subject matter experts (SMEs), training instructors and logistic support for CSRR.

Once SSC Charleston receives the "brains" of the system -- the C&M software from Lockheed Martin -- the hard drives are built and the components integrated into the racks. There follows a multitiered testing program of each rack. Multiple racks are then integrated and tested using a simulation-stimulation (SIM-STIM) interface, which saves time and cost. Once fully tested, the shipset is disassembled and shipped to the boat. The AIT works 12-hour days in-





*The Common Submarine Radio Room integrates warriors, sensors, networks, command and control, platforms and weapons into a networked, distributed combat force.*

stalling the new room on board the submarine, then there is complete operational over-the-air and end-to-end testing. With the system up and fully operational, the SSC Charleston team's job is still not done. SSC Charleston personnel embark to train the crews at sea. In addition, familiarization courses are held at the Trident Training Facility (TTF) and supported by SSC Charleston and fleet personnel to teach submarine crews the operation and capability of their new CSRR.

After more than five years of effort, the team recently celebrated a successful *Seawolf* class operational test readiness review and a program review that lets the team go forward with four more CSRR procurements.

"SSC Charleston has continued to demonstrate how to smoothly conduct installations in difficult shipyard environments, stay out of the critical path, and do higher quality work at lower cost than the competition," said Capt. Jerry Nies, PMW-770 program manager, in a recent note to the entire CSRR team, adding that Charleston's production and installation work for the *Ohio* class is going so well that it is being used as a template for the rest of the Navy.

Code 53 is credited with organizing the effort and laying the groundwork for the program. The Corporate Production Facility, under the C4ISR Acquisition, Engineering and Integration (CAEI) Division (Code 09C1), is the site for the CSRR system integration. A government/contractor team tracks every step of the process, and the CSRR section often leverages with SSC Charleston key players involved with the Naval Modular Automated Communications System (NAVMACS)/SubSMS, extremely high frequency (EHF), DMR test facility, SATCOM labs and the Global Broadcast Service (GBS) to improve service and lower cost.

According to Bruce Edmund, CSRR project manager for SSC Charleston, the Charleston team has greatly improved the processes involved with CSRR and saved the Navy lots of money. Previously, there were several organizations doing procurement of CSRR equipment, which made

it extremely labor intensive to procure, track and ensure on-time deliveries to meet critical installation schedules. "Roy Lindsay, who provides government oversight of our industry partner for production and integration efforts, briefed the program office proposing that Charleston do all equipment procurements required to build CSRR," Edmund said. "Now SSC Charleston does all those procurements. The program has one government agency now to monitor and get real-time feedback on vendors meeting required deliveries for integration into CSRR," he added.

The local CSRR team designed and built a mobile appliance which mimics the submarine hull curvature, allowing

*Continued on page 14*



Photo provided

*Team members in the Corporate Production Facility utilize a mobile appliance emulating the submarine hull curvature which allows them to run and test the 300+ cables involved.*

## CSRR

*Continued from page 13*

them to emulate cable runs and identify interference issues before installation. During final testing, the CSRR is operated as it would be on the submarine with all 300+ cables connected rack-to-rack overhead. This verifies proper operation of the equipment and also saves time and dollars.

Two-dimensional rack mock-ups allow cable and connector testing, verifying cable integrity. "We can put the components inside the mock up, program an automatic cable tester and test 383 cables in less than half the time it required before," Edmund said. The Charleston team also installed electronic auxiliary fresh water (EAFW) loops in the mock-ups to ensure the cooling systems in each rack work properly before installation, accomplishing another key test event in the process. SSC Charleston's highly successful efforts with preinstallation and check out and SIM-STIM of CSRR resulted in PMW-770 eliminating follow-on test requirements at another test facility, saving up to \$1 million per shipset.

"The bill payer made the decision. SSC Charleston's test program developed for CSRR more than fulfilled the test requirements prior to delivery to the submarines," said Edmund, "and the 'Big Navy' is seeing the savings now. They can't afford to continue doing business the way it was done during the Cold War era. SSC Charleston has proven it can be done cheaper and faster and we can deliver a quality product to the fleet." Representatives from the Navy surface community have been looking closely at Charleston's innovative production and E2E testing using SIM-STIM. They have visited the Corporate Production Facility, Edmund said, and are very interested in the CSRR initiatives.

The Charleston team also streamlined delivery of the CSRR suites to the warfighter. The complete CSRR suite including cables and installation material is collected, inventoried, and shipped as a unit via 20-foot CONEX containers. Shipping as a unit eliminates the possibility of missing items and minimizes the manpower needed to request, track and receive individual components from various locations. Shipsets go from Charleston to pierside anywhere in the U.S in three to five days.

"Finding better ways to do business and streamlining processes have gotten a lot of folks' attention," said Edmund, who served in and worked on submarines for 28 years. "Captain (Richard) Nicklas (PMS-398) was amazed watching delivery of the first SSGN CSRR produced and tested by SSC Charleston," he said. Completing testing only a week and a half before, the system was packed and

shipped across country to Puget Naval Shipyard in Bremerton, Wash., in four days and placed pierside by the submarine. Eighteen racks of equipment were loaded onto *USS Ohio* in three days.

Originally, the CSRR suite loaded on the *USS Ohio* was slated for the second SSGN CSRR installation. At NAVSEA's request, priorities were shifted in order to deliver the Charleston CSRR suite ahead of schedule. Charleston's ability to improvise and adapt in order to overcome the potential delays posed by late delivery of the first CSRR shipset by another agency added to the overall *USS Ohio* success story.

"SPAWAR Charleston saved the SSGN conversion program, with innovation and determination," Nicklas said.

While there are numerous key Charleston personnel without whom success may not have been possible, Daniel Brothers, CSRR assistant program manager at PMW-770, praised SSC Charleston's Bednarczyk and his team for their efforts on the *Seawolf*-class CSRR. "The team has made a significant improvement in the systems over a short period of time," Brothers said.

In recognition of some individual achievements, Brothers started an initiative to name each CSRR suite (e.g., *USS Michigan* SSGN 727 will be named the "Edmund Room.")

"We continually develop, advocate and finely tune an effective partnership with the various government agencies and industry partners," Bednarczyk said. "The team concept and unselfish dedication by all has contributed greatly to CSRR's success."

Through the CSRR effort, SSC Charleston helps bring the submarine into the network centric communications architecture that will give a new level of precision and persistent offensive power to the maritime warfighter.

- Susan Piedfort, *Chronicle* Editor



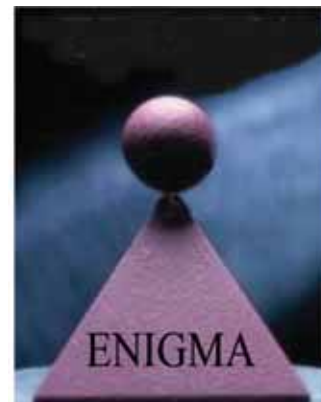
U.S. Navy photo

**SSC Charleston is playing a vital role in bringing submarines, such as *USS Michigan* pictured above, into the network centric communications architecture.**





Photo by Harold Senn



*The ENIGMA team is, from left, front row, Angela Chambers, Raymond Jacob, Russell Briggs, Suzanne Gonzalez, Manuel Dennis, Terrence Richburg, Regina Gray; back row, Greg VanTuyle, Ross Kim, Roy Johnson, Joseph Brown, John Griffiths, Christine Meyers and Dr. David Litwack .*

# ENIGMA:

## *A solution in search of a problem*

An enigma is defined as something hidden or difficult to understand. The Space and Naval Warfare Systems Command's Washington, D.C.-based ENIGMA (ENterprise Information Assurance Global Multidisciplined Associates) program is "a solution in search of the problem."

Massive global networking makes the United States the world's most vulnerable target for information warfare. ENIGMA is a program created to identify and resolve the information assurance and security challenges facing the federal government today. It provides the means to immediately assess potential cyber vulnerabilities and exposure to attack.

The ENIGMA team was conceptualized and formed at the General Services Administration in 2000. SSC Charleston championed the ENIGMA program in October of 2001. This prompted the implementation of INFOSEC vulnerability assessment services under ENIGMA, which uses the INFOSEC Assessment Methodology (IAM) developed by the National Security Agency (NSA) as the standard for conducting assessments throughout the federal government. The IAM examines the customer's mission, organization, security policies and programs, information systems and the threat to these systems, with the goal determining vulnerabilities and recommend effective, low cost countermeasures.

The team is made up of a group of technical experts with more than 100 years of combined experience in information assurance and communication security. The strength of the SPAWAR ENIGMA team is in its "trusted neutral" relationships and partnerships with its customers. The definition of "trusted neutral" is an impartial, reliable, trustworthy and authoritative IT source; i.e., government employees working for the government.

The ENIGMA program manages six areas of information assurance: security planning, risk assessment and vulnerability assessment, contingency planning, certification and accreditation, and information assurance security education and training.

ENIGMA program customers include the Navy, Maritime Prepositioning Future Force, NAVSEA, *USNS Mercy*, *USNS Comfort*, Littoral Combat Ship, SPAWAR NCR APEX, BUMED, Army, PEO Soldier, Defense Logistics Agency, DoD – Joint Chiefs of Staff, Department of State, Department of Interior, Bureau of Census, Department of Treasury, Custom Service, Postal Service, National Labor Relations Board, Department of Justice (FBI) and the National Oceanic & Atmospheric Administration.

For more information on the ENIGMA program, contact Program Manager Suzanne Gonzalez at (202) 685-1665, or by email at [enigma-ia@mail.navy.mil](mailto:enigma-ia@mail.navy.mil).



Photos provided

*Above, Doug and Brenda Wolters admire the plaque honoring the Golden Heart crew. The plaque and photos were affixed to the recently unearthed tail section of the plane, left.*

# C o l d W a r H e r o e s

Dale Richardson Jr., has a special appreciation for American servicemembers who keep and have kept our nation's freedom today and in the past. He served during the first Gulf War, has been a SPAWARrior since he started working at NAVELEXSYSENGCEN in Washington, D.C., in 1975 and through his current work in Code 533's shore communications branch of platform communications engineering, he helps support today's warfighter.

But the biggest reason for Richardson's appreciation is a man he never met, a man who never even knew he existed – his father.

Air Force Maj. Dale Richardson Sr., was killed during a secret 1956 Alaska air mission. No one survived the airplane crash that took the lives of the 11-man crew, and no definite cause for the crash was ever determined. Next of kin were told the aircraft was on a routine weather mission. It was the Cold War era, and the need for secrecy was paramount.

Andrea Richardson Stowers, sister of Dale Jr., was seven when her dad died. Another sister, Janet, was six. "Bubba" (Dale Jr.) was born five months after the crash. Stowers remembers when she and her mother met her father's casket at Union Station that two others were rolled in beside his for burial at Arlington National Cemetery. She wondered about the other two men who had shared her father's last hour. Her quest for answers consumed nearly 50 years.

Working from her father's brittle, yellowed flight records and mission assignments, Stowers searched for the families of the other crewmen. Last spring she found two: the son of First Lt. William Wolters Jr., and the elderly mother of Airman Second Class Melvin O. Lindsey.

Recently two other unrelated events — the declassification of documents relating to the accident and the melting of glacial ice in Alaska — have brought closure to the families of what was known as the Golden Heart crew. As their fathers had worked together 50 years ago, Stowers and





Photo provided

*The tail section of the plane, located some distance from the main wreckage, was found in July when glacial ice had melted enough to expose it after 50 years.*

Doug Wolters teamed up to find the missing remains of the aircraft and bring to light the heroic service of their fathers.

Thanks to precise coordinates from an accident report Stowers found and Wolters' experience in reading maps as a geologist, the crumpled tail section of the plane was found in July when a glacier had melted back to expose it for the first time in decades. In August Wolters and his wife Brenda went to the site where the WB-50B's tail section is embedded in the sandy river bottom soil.

A memorial service at the site featured the reading of a eulogy written by Stowers. To the plane Wolters attached a plaque and laminated photos of William Wolters holding his infant son, and of Richardson at the cockpit controls. The eulogy, copies of Richardson's letters, pictures of B-50 flight commanders and engineers, and of Golden Heart being christened at Eilson were all sealed in a safety deposit box and buried at the site.

"My father died when I was a baby and I have always wanted to know how and where he died," Wolters said. "For a very long time, I couldn't find anyone who could even tell me where the wreckage was located."

Ironically, both Wolters and Stowers suffer from a spinal degenerative disease which made going to Alaska impossible for Stowers. Wolters made the trip against doctor's orders. After the ceremony at the crash site, Wolters wrote to Stowers, "...we had a perfect day and had you in our hearts.... I was able to reach my mother via satellite phone and we shared a few tender moments together which was very unique and special. She was sitting by the phone for four hours hoping to hear from us! She's like a little girl today and I think she feels like she's that young bride who lost her husband 50 years ago."

Stowers' quest brought her closer not only to Doug and Brenda Wolters, but also to an elderly retired beauty salon

*Continued on page 19*



Photo courtesy the National Museum of the Air Force

*The aircraft was christened "Golden Heart" in honor of Fairbanks, known as the golden heart of Alaska.*

## The final flight of Golden Heart

On Aug. 31, 1956, 11 men lifted off the runway of Eielson Air Force Base, just outside Fairbanks, Alaska, in a WB-50D Superfortress (tail number 49-315). They were assigned to the 58th Weather Reconnaissance Squadron (WRS), 7th Weather Wing, Air Weather Service. The propeller-driven bomber was equipped for long-range weather reconnaissance missions with high-altitude atmospheric samplers, Doppler radar, weather radar and a bomb-bay fuel tank for extended range.

On board were Copilot Maj. Dale Richardson; Capt. Leonard Chapman Jr., of Charleston, S.C.; Capt. Everett Dyson; First Lt. William Wolters, Jr., weather observer; Second Lt. William Faustlin; Master Sgt. Fred Gregg Jr.; Tech Sgt. Richard Brown; Staff Sgt. Ronald Ragland; Airman Second Class Melvin Lindsey, radio operator; Airman Second Class Elijah Spencer and Airman Third Class Douglas Maxon.

For reasons unknown, approximately one hour into the flight, the aircraft crashed on an island in the Susitna River, about 35 miles northwest of Elmendorf Air Force Base. The wing hit the ground first and the rest of the plane came apart, leaving the tail section some distance from the main wreckage. There were no survivors.

Family members were told the aircraft crashed during a routine weather reconnaissance mission. Declassified documents have revealed the actual mission of Golden Heart was to fly thousands of miles west over the northern Pacific Ocean to penetrate radioactive clouds "hot" from Soviet nuclear testing, gather fallout samples and return to Alaska with evidence of Russia's weapons capabilities.

## Cold War Hero

# Maj. Dale Richardson

Born Jan. 11, 1908, in Parker, S.D., Dale Richardson traced his ancestry to County Cork, Ireland. Orphaned at age four when his father died, he was adopted by Mr. and Mrs. Frank Richardson of Wood, S.D., and moved to Los Angeles, Calif., as a boy. He had always wanted to fly and before joining the Air Force in 1943, he was a stunt pilot for Howard Hughes, a detective in Fullerton, Calif., and a civilian flight instructor training military pilots all over the U.S. and South Pacific. Most of his Air Force career involved classified missions. He served at the Mercury Nevada test range during atomic tests, and was an "A-bomb watcher" at the Bikini Atoll atomic test site. The aviator had already survived two plane crashes.

One crash was on Bikini Island when his plane lost all power during a test of the effects of an atomic electromagnetic pulse on aircraft. The pulse caused a total system failure on the plane, resulting in the crash.

After marrying Minnie Lee in 1948 he left the Air Force and worked in the Office of Strategic Intelligence in Washington to spend more time at home with his young family. In February of 1956 he returned to active duty and, after training in Florida, went to Alaska. At the time of his death, he had been assigned to the 58th Weather Reconnaissance Squadron for three months as



*Richardson, seen here as a second lieutenant flight instructor, circa 1944.*

his wife was pregnant with the son they had both hoped for — he worried about his newly transplanted family, which was still unpacking in their new home. According to his daughter, he also felt uneasy about the mission.

Andrea had curled up at the bottom of the stairs thinking her dad wouldn't leave if he had to step over her. "He stopped to scoop me into his arms, holding me tightly to his chest as he whispered his premonition that this flight was doomed," she said.

Because of the inherent danger of their business, airmen routinely took out multiple insurance policies before a mission, only to cancel them upon their successful return. Richardson took out many insurance policies. He canceled some, but a good number were still in effect at the time of his death.

"I always wondered how my mom kept three houses and didn't work," said Dale Richardson Jr. Though Dale Richardson Sr., couldn't tell his family the nature of his missions, this Cold War hero's careful planning ensured his family — including a son he never knew — was well taken care of long after his death.



U.S. Air Force Photo

*The famous photo from National Geographic of A-bomb watchers shows Richardson, fifth from right, during atomic testing on the Bikini Atoll. This earned Richardson the designation "Brother Pig" from the Grand Council, Exclusive Order of Guinea Pigs, Kwajalein, Marshall Islands, on April 24, 1946 for "subjecting his body to the rigors attendant to atom bombs...."*





## Son and Father

*Dale Richardson Jr., left, pictured speaking at the Sept. 2 memorial service for Cold War heroes at the Arlington National Cemetery amphitheater, bears a strong resemblance to the father he never met. Dale Richardson Sr., at right, is pictured in a service photo.*



## Cold War heroes

*Continued from page 17*

owner from Alexandria, Va., who Stowers now describes as “a second mother.” While looking through family mementoes, Stowers found an obituary and photo of a handsome African-American man in an Air Force uniform -- Melvin O. Lindsay. The obituary noted he was from Alexandria, Va. Last year when Stowers returned to Alexandria to live, she made fliers with the photo and put them all over Old Towne. Several people remembered the young man’s mother.

Now 88, Thedessa Weaver still remembers how unhappy she was when her only child Melvin enlisted in the Air Force against her wishes. Then 17, Melvin had long dreamed of following in the footsteps of the Tuskegee Airmen. Weaver had no idea that he was flying dangerous, secret missions on the other side of the world.

Stowers recalled that her dad had received all the appropriate military honors, including a flyover, at his funeral in 1956. This was not so for the young man in the third casket that arrived with her dad’s at Union Station. “Melvin didn’t get that, and I wanted to see that he did,” Stowers said. “I also wanted Mother Weaver to be here to see that happen.”

After nearly five decades Stowers found an advocate for her cause in Virginia Delegate David Englin. In March he sponsored a resolution through the Virginia State Assembly honoring the life and work of Airman Lindsey.

On a rainy Saturday exactly 50 years and two days after the crash that took their lives, the Golden Heart crew was honored during a memorial service at the amphitheater at Arlington National Cemetery. Virginia Governor Timothy Kaine said in a letter read during the service, “The rise of Communism and the strength of the Soviet Union was a very real threat to the security of the United States, and these men served on the front lines of the Cold War.... They

died unable to tell their loved ones why they served and why they took such great risks.”

Weaver, now living with a relative in North Carolina, was especially touched by the service. “I just want everyone to know how grateful I am and how much I appreciate Andrea [Stowers] thinking so much about my child,” she told a local reporter. “He was a good boy who never gave me a bit of trouble. I still have his letters and I think about him every day.”

Wolters bought bowls carved from a willow tree in Willow, Alaska, the town closest to the site of the plane crash. He filled the bowls with sand from the crash site and a piece of driftwood, and gave the other families these bowls as a remembrance.

The Sept. 2nd service brought some closure to the Golden Heart families, but also honored the sacrifices of Cold War veterans who, because they served in secrecy and silence, have no memorials or plaques on the National Mall as do veterans of America’s other wars.

“The veterans I found in my search for what happened and for other survivors are proud of the vows of silence they have kept for over five decades,” Stowers said. “Even with the Cold War long over and the passage of half a century, the extraordinary contribution they made at that critical time in America’s history has gone, for the most part, unacknowledged,” said Stowers. Her book, *Cold War Orphan*, will chronicle the lives of her father and the men who died with him and will highlight their contribution.

The Cold War heroes’ service is especially fitting today, the Golden Heart family members believe, as men and women are fighting a global war on terrorism. They, like Maj. Dale Richardson Sr., are making an extraordinary contribution at a critical time in America’s history.

Though he did not live to see the end of the Cold War or the son he had always wanted, Richardson fulfilled a last wish he made to his little girl over 50 years ago -- helping ensure all the little children here at home sleep in peace and safety.

*- Susan Piedfort, Chronicle Editor*



*Camp Bondsteel has grown to resemble a full-fledged military installation, encompassing 955 acres with a 7-mile outer perimeter. Bondsteel is located on rolling hills and farmland near the city of Ferizaj/Urosevac.*

## ‘Geo-enabling’ Army base in Kosovo

Thanks to the work of SPAWARriors in Europe, the Army has established better control of resources and real property for its peacekeeping operations in Kosovo.

During FY05 personnel from the Expeditionary Support Office (ESO) of Headquarters, U.S. Army Europe (USAREUR) recognized a need to get better control of resources and real property dedicated to the U.S. Army’s efforts in peacekeeping operations in Kosovo.

The Army has had a presence in Kosovo since 1997, when then President Bill Clinton ordered the U.S. military to intervene in what could have been an effort by Serbian forces to “ethnically cleanse” the southern portion of Kosovo of indigenous ethnically Albanian inhabitants. A U.N. authorized presence was established at various locations, one of which was Camp Bondsteel, Kosovo. “Operation Joint Guardian” has continued ever since under a U.N. mandate, and the forward operating sites such as Camp Bondsteel have been managed by ESO from Heidelberg, Germany.

Operationally, Camp Bondsteel is one of the largest bases established by the U.S. Army since Vietnam. Initially established in July 1999, it has grown

to resemble a full-fledged military installation. Bondsteel is located on rolling hills and farmland near the city of Ferizaj/Urosevac.

U.S. forces entered Kosovo in June 1999 following NATO Operation Allied Force. Since then, military officials worked to rapidly improve service members’ quality of life. At the outset, planners wanted to use the lessons learned in Bosnia and convinced decision makers to reach a base-camp “endstate” as quickly as possible.

Because of uncertainty about the Bosnian mission’s duration, when the Army moved across the Sava River into Bosnia in 1995, soldiers were housed first in tents – in the winter! Only years later were they moved to base camps to live in semipermanent Southeast Asia (SEA) huts, using a theater-of-operations design that first made its debut in Vietnam. There are currently about 250 SEA huts for living quarters and offices. The buildings have five living areas that house up to six soldiers each.

SSC Charleston was tasked in late FY05 to provide a “geo-enabling” capability to the USAREUR “Red Book” – the “Base Camp Bible” for managing the Kosovo bases. Army civilian Joseph Bost had seen examples of “one base

one map” at an Air Force installation and thought this technology would not only enhance day-to-day operations at Camp Bondsteel, but also provide the capability to manage the base toward its eventual endstate. As the lead manager in Balkans Contingency Operations for HQ USAREUR, Bost’s job is to coordinate support for bases like Camp Bondsteel. He knew that such geo-enabling would establish the processes and technology that could be deployed in other future Army contingency operations, while adding a combat capability that didn’t currently exist in the Army inventory.

The original problem set had been characterized as “building cars one car at a time” – not the most efficient way of doing things. At the beginning of the project, there was no centralized capability to enhance and exploit management of engineering resource and design data in forward operating sites (FOS). No effective method existed for sharing geospatial and visualization best practices between USAREUR units. The USAREUR FOS information operations were “product-based” and therefore data were created, managed and disseminated in an ad hoc approach which varied significantly from FOS to FOS. Standard USAREUR datasets





Photos provided

***Local nationals employed by the Army are trained on the basics of GIS as part of the Expeditionary Geospatial Data Collection (EGDC) project.***



***Remains of a Serbian tank at Camp Bondsteel.***

for Camp Bondsteel were incomplete and did not meet USAREUR FOS data-centric operational requirements. It was recognized that if a repeatable process could be established, then other USAREUR units could benefit from efforts to standardize the design, implementation and visualization of FOS engineering data solutions. SPAWAR personnel began with interviews at USAREUR HQ to ensure the unique effort was understood by staff and so there was no duplication of effort.

Datasets from multiple sources were quickly gathered, conflated (merged in a geospatial sense) and evaluated for mission enhancement potential. Among these were imagery from commercial and National Geospatial-Intelligence Agency (NGA) sources, vector data from open sources and finally computer-aided design and drafting (CADD) data from Kellogg Brown and Root (KBR), the Army prime contractor for services at Camp Bondsteel. The data varied in formats, projections, scales and accuracy.

A huge piece of the task was evaluating the current state of the data and creating a uniform data model in which to implement an overall GIS visualization capability for the Camp Bondsteel staff. With feedback from the staff, a SIPRnet site was set up to demonstrate the visualization potential for Camp Bondsteel and to generate user feedback.

The overall mapping effort focuses on information critical to Army decision makers during day-to-day management of a base camp. The intent was to generate georeferenced site information in a common data framework consisting of imagery and map features organized by layer, and to furnish an integrated framework to store and access expeditionary site planning data provided in a relevant time frame. Another goal was to provide the context, processes and, most importantly, a standard data model that could be reused in future expeditionary efforts.

USAREUR had for several years been working to establish a common geospatial data model that would include urban level data not currently supplied by NGA, through the establishment of the Theater Geospatial Database. It was quickly realized by staff that the Expeditionary Geospatial Data Collection (EGDC), as the Balkans GIS effort became known, could very easily help define the tactics, techniques, and procedures and processes for urban data collection for future Army endeavors, including the very difficult issue of merging different data standards into one functional model.

The EGDC project was based on building a strategy (brainstorming the project goals); organizing (organizing and chartering a team); building the map (collecting the available data); sharing the map (deploying the prototype system); integrating the map (using the

prototype to solicit new requirements); exploiting the map (supporting the Camp Bondsteel user community); and sustaining the map (keeping the data current).

In the past year, the SPAWAR team has progressed to "Sharing the Map." In September 2006 SPAWAR personnel deployed to Camp Bondsteel for the initial equipment installation and training of local nationals employed by the Army in the basics of GIS. The initial user community was to be located in the Public Works Office, but the presence of the equipment quickly generated interest in other areas of the base, including the real estate and environmental engineering offices.

Future efforts will be drawn from and be dependent upon requirements gathered as a result of the initial training and deployment. Far from being the typical DoD big system development, the EGDC effort will continue based on available funding and utility as determined by the user community at Camp Bondsteel and USAREUR. If the effort proves itself as hoped, it will provide the Army in Europe with a means of better managing base camps throughout the AOR utilizing GIS technology. It may also help better define the lifecycle of base camps in general – an issue being worked by the Joint Operational Engineering Board (JOEB) at the Pentagon.

- Dr. (Lt. Col.) Michael L. Thomas,  
Code 572

# Chief of Staff Bob Kappler retires

SSC Charleston Chief of Staff Bob Kappler retired at the end of September, bringing to an end a career of significance spanning 44 years and 11 months.

A Missouri native, Kappler graduated from the University of Missouri in 1961 with a bachelor of science degree in electrical engineering. He began his government career later that same year as a missile systems test engineer with the U.S. Army Test and Evaluation Command at White Sands Missile Range in New Mexico. During missile test firings, he worked from ground station rooftops where directional antennas were used to track missiles in flight and recover telemetry data from on-board sensors. Kappler then analyzed this data to determine missile performance.

One of his major contributions at White Sands, known as “the most instrumented 400 square miles of real estate in the world,” was the design of a range timing synchronization system. While a master clock distributed range timing to the ground stations scattered throughout the range, the signal reached the various stations at different times, and synchronization was not exact. Using a portable atomic clock and measuring in milliseconds, Kappler determined the delay time for the signal at each station. He then designed a unique digital range timing synchronization system which compensated for the different travel times of timing signals to each location.

After earning a master’s degree in business administration, Kappler accepted a position at the Pentagon, and moved his family more than 1,700 miles to Washington, D.C., over

the Thanksgiving weekend of 1971. He served as the Army TEMPEST program manager on the staff of the Assistant Chief of Staff for Force Development, Office of Signal Security and Electronic Warfare, for three years. In this capacity he worked with teams all over the world to survey data processing equipment and ensure adequate protection against compromising signal emanations. In 1974 he transferred to the Naval Electronic Systems Security Engineering Center (NESSEC) in Washington as the Navy’s TEMPEST field survey program manager.

He found the TEMPEST work to be as rewarding as that at White Sands. “I felt I was really doing something important,” he said. “I was part of something much bigger than myself.” As Rear Adm. Michael Bachmann, commander of SPAWARSSCOM, noted in a letter highlighting Kappler’s valuable contributions to the country’s defense, some of the cryptographic equipment Kappler provided to the fleet during his time at NESSEC is still being used on Navy ships today.

In 1982 Kappler became executive director of NESSEC in Washington, serving as the senior civilian of the command and principal advisor to the commanding officer. The 1993 Base Realignment and Closure (BRAC) decision brought together four East Coast engineering centers — Kappler’s NESSEC in Washington, and those in Charleston, S.C.; Portsmouth, Va.; and St. Inigoes, Md. — to form the Naval Command, Control and Ocean Surveillance Center, In-Service Engineering, East Coast Division (NISE East)

Kapplerism: “*Learn how to think and how to learn.*” With that in mind, we offer a ...

## Q&A

***What’s been the most rewarding aspect of your work at SSC Charleston?***

Without question, the most rewarding aspect has been the opportunity to work with so many incredibly talented and dedicated people, and close behind that, I would put the opportunity to be a part of something as significant and successful as this command.

***What’s been the most rewarding aspect of your entire federal career?***

Throughout my entire federal career, from the beginning at White Sands Missile Range to the end here at SSC Charleston, I’ve been fortunate to have always been a part of something of which I could be proud. I’ve always had the pleasure of feeling good about telling people what I do.



***Who has had the most positive impact on your career, and how?***

I know it will sound trite, but I have to say my father. He taught me from an early age the importance of working hard, of always giving that extra measure and being someone others would want as an employee. He also taught me to be considerate of the feelings of others and earn their trust.

***What do you think the more “seasoned” federal employees can do to help the new generation of employees?***

Is that what I am, “seasoned”? Probably the best thing we can do is get out of their way! If I were to offer them any advice, it would be to take pride in your work, enjoy your life, and recognize that someday you will be old and someone will be asking you questions like these.



in Charleston. In 1994 Kappler was selected as its chief of staff. He spent a year going back and forth to Washington, working out of Building T-1 off and on for two weeks at a time, during the critical period in which the four centers were combined.

Since each center had its own special area of expertise, proud traditions, unique business methods and following of satisfied customers, Kappler explained, the process of combining them had great potential for failure. "We made some mistakes early on, but we overcame them and worked together in a positive way to create something here that has been successful beyond anyone's wildest expectations," he said. The 1995 BRAC decision merged the Naval Command, Control and Ocean Surveillance Center into its parent command, SPAWARSSCOM, and NISE East became SSC Charleston. Today Kappler considers the 24 combined years as NESSEC executive director and as SSC Charleston chief of staff his most rewarding, both "dream jobs I was very fortunate to have," he said.

A retirement luncheon held in Kappler's honor Sept. 21 was attended by more than 160 well wishers, filling the Redbank Club ballroom to near capacity. Letters from U.S. Congressmen, Navy personnel -- and even from Kappler's personal hero Chickenman -- were interspersed with tributes from many who worked with and for him through the years.

Noting his mixed feelings on the chief of staff's retirement, SSC Charleston Commanding Officer Capt. Red Hoover said, "James and I will no longer be able to say, 'Ask Mr. Kappler to take care of that.'"

"You have been SSC Charleston's ambassador, orator, moderator, representative, humorist and master of ceremonies for both official and unofficial functions," Hoover said. He praised Kappler's counsel to the Business Board and the Executive Council, and his representation of the command on boards such as the Human Resources Service Center-Southeast Region Customer Advisory Board and the Greater Charleston Federal Executive Association, for which he served as president for two terms.

In his farewell remarks, Kappler said he couldn't have found a better place than SSC Charleston to complete his career. "What we have created together here in the Lowcountry is truly remarkable," he said. One of his duties as chief of staff was to accompany important visitors on command tours and briefs by the CO, ED and various project engineers. "What an experience!" he said. "To see and hear the enthusiasm, commitment and professionalism exhibited by our folks was inspiring and amazing. I wished then, and I wish now, that every employee of the command would have the opportunity to take those tours and hear those presentations. I think most would be dumbfounded to realize the magnitude of this thing of which they are a part.



Photo by Harold Senn

***Bob Kappler wields the "Grammar Hammer" honoring his editorial expertise, one of many gifts he was presented during a retirement luncheon in his honor.***

"I doubt that anyone in this command, with the possible exception of the CO and ED, really understands the full range, variety and importance of the work being performed by our people. Or, for that matter, the astonishing skill and dedication of the people doing that work," he continued.

Kappler praised the degree to which SSC Charleston employees retain their motivation, particularly those in the support codes who work without the positive emotional feedback from visiting dignitaries or outside customers.

"No crowds cheer them, no dignitaries shake their hands ... yet they continue to process the payroll, stock the supplies, deliver the mail and keep the command operating. In my opinion they are heroes as much if not more than the project engineer who is able to bask in the customer's praise of his or her success, and I am proud to have served with them," he said.

Noting the many who have helped him along the way, Kappler thanked his wife Sue first. "We've been married for 42 years," he pointed out, "and if I want to try for 43 then she's at the top of the list." In retirement he'll spend more time with her, their three grown children and their grandchildren. The biggest challenge he faces now, he said, is cleaning out his garage. He will also devote a portion of his retirement years, he added, to combating "this society's irrational fixation on starting things before 10 a.m."

Reflecting on a career which began in measurements of milliseconds and continued for 45 dedicated years, Kappler said he will miss the people the most. "I will miss the friendships, the daily contact with talented and caring people," he said, "and the strong sense of purpose our work gives us."

- Susan Piedfort, Chronicle Editor

## Howell retires with 32 years of service

Ann Howell retired Sept. 30 with more than 32 years of federal civilian service. Howell, who began her civil service career in Norfolk, Va., as a clerk-typist, ended her federal career as a small and disadvantaged business specialist at SSC Charleston.

During a retirement luncheon held at the Redbank Club Sept. 27, Howell was praised for the “meteoric rise of small business participation in contracting opportunities” at SSC Charleston. Her expert counsel to small and disadvantaged businesses enabled them to gain access into the world of government contracts. This effort resulted in a broad base of quality supplies of material and services for the Navy.

In addition to numerous performance awards and letters of appreciation, Howell has been honored with the 2005 Department of the Navy’s Small Business Specialist of the Year, the 2005 Small Business Administration Leadership Award, and a 2006 under Secretary of Defense Sustained Superior Performance Award.

In September 2004 SSC Charleston was awarded the first-ever Outstanding Compliance Review award, which was attributed in great part to Howell’s leadership. The award noted Howell’s vigilance and dedication that resulted in approximately 46 percent of SSC Charleston’s prime contract awards going to small and small disadvantaged businesses, amounting to approximately \$1.5 billion in contracts.



Photo by Susan Piedfort

***Ann Howell receives the Navy Superior Civilian Service Award from SSC Charleston Commanding Officer Capt. Red Hoover during her retirement luncheon.***

During the luncheon, Susan Burrows, director of SPAWARSSCOM Small Business Programs, made a presentation to Howell from SPAWAR headquarters in recognition of Howell’s significant contributions in support of the Team SPAWAR Small Business Programs.

In her remarks, Howell thanked the members of her team, and said SSC Charleston has been a very special place. “When BRAC ‘93 moved me from Virginia to Charleston, my theme song was ‘Carry Me Back to Old Virginia.’ But it didn’t take long until I was singing ‘Nothing Could be Finer...,’” she said.

## Hassell ends federal civil service career



Photo by Harold Senn

***Marsha Hassell***

Marsha Hassell, Congressional and Public Affairs Officer (PAO) for SSC Charleston, retired Sept. 30 with 27 years of federal service.

An SSC Charleston plankowner, Hassell had been PAO for the command since 1999, serving formerly as an admin specialist in Code 60. As PAO, her activities highlighted to the public the vital role played by SSC Charleston in support of the Navy and the

warfighter. During her tenure she also saw the Public Af-

fairs Officer position grow to include the Congressional liaison function. This gave Hassell a unique view into how Congress and their staffs work. “It was like having a perpetual civics lesson,” she said.

At SSC Charleston Hassell was active in a variety of volunteer programs, especially with area schools and in the partnership and mentoring programs SSC Charleston has with Hanahan and Gregg middle schools. “We expose the teachers and students to the technology of the future,” Hassell said, to cultivate an interest in electronics at an early age. “We want to inspire both the teachers and the students with the type of work we do.”

Hassell was presented South Carolina State Board of Education Volunteer Award for the 2000-2001 school year for her significant volunteer contribution to local schools.

Hassell has a bachelor of arts degree in psychology from the University of California at Berkeley and a master’s degree in psychology from Howard University.



## Code 70 employees end federal careers

*Members of the SSC Charleston Code 70 team who retired at the end of the fiscal year were honored during a Sept. 29 ceremony at the conference center. Pictured with SSC Commanding Officer Capt. Red Hoover are, from left, David A. Nichter, Raymond F. Dohm, Speros "Nick" Drake, James W. Engles Jr., Inga L. George, Don Wendell Leduff, Janet W. Byrd, Michael T. Kutch Jr., Donald I. Propst and Lawrence R. Rogers.*



Photo by Susan Piedfort

## SSC Charleston bids farewell to FY06 retirees

Burnis Acuff, Code 726  
Francis Allston, Code 09C12  
Barbara Atkinson, Code 595  
Kennith Atkinson, Code 70W  
Richard Barfield, Code 832J  
Linda Barnes, Code 0219  
Belle Barnhill, Code 595  
Brenda Barrineau, Code 0217  
Dennis Battle, Code 09C1  
Bradley Bergmann, Code 773  
Harvey Berman, Code 591  
Charles Berry, Code 771  
Jimmy Betts, Code 851  
John Bevis, Code 63D  
Leonard Billmeier, Code 563  
Deborah Blanton, Code 66  
Grainger Blanton Jr., Code 0B  
Timothy Bouquet, Code 772  
Grady Bowman, Code 025  
Don Bozard, Code 513  
Jerry Brown, Code 51  
Dean Bui, Code 664  
Billy Bunton, Code 846  
Janet Byrd, Code 772  
George Campbell, Code 771  
William Cashman, Code 591  
Gabina Celiz, Code 0232  
Brenda Clark, Code 0124  
Steve Clarke, Code 512  
Frederick Connor, Code 0215  
Frank Cross, Code 854  
Paul Cyr, Code 596  
Helen Devera, Code 0A2  
William Dewey, Code 844  
Raymond Dohm, Code 726  
Speros Drake, Code 70C  
Milton Edwards, Code 852  
James Engles Jr., Code 725  
Manuel Faria Jr., Code 857  
Victoria Fernandez, Code 781

Patrick Fine, Code 711  
William Foxworth, Code 50P  
Virginia Frederick, Code 661  
Richard Froom, Code 725  
Inga Lees George, Code 721  
John Getsinger, Code 662  
Dean Glace, Code 50D  
Patricia W. Godwin, Code 0215  
David Goodridge, Code 832J  
Gary Gonzalez, Code 854  
William Grolemond, Code 56  
Karen Gunther, Code 774  
Susan Gustafson, Code 764  
Edward Halstead, Code 845  
Jeffrey Hammett, Code 593  
Walter Harding, Code 833  
Robert Hardison Jr., Code 853  
Marsha Hassell, Code 0A6  
Sheree Hayes, Code 764  
Stephen Hefley, Code 536  
James Hester, Code 0131  
Paul Hill, Code 83C  
Deborah Hirschhorn, Code 0A5  
Karen Holland, Code 09W11  
Johnnie Holland Jr., Code 834  
Gerald Holst, Code 532  
Ann Howell, Code 0A1  
Deborah Hunt, Code 837  
Jewel Ingram, Code 591  
Joseph Jaquith, Code 619  
Vega Jimenez, Code 512  
Eric Johnson, Code 595  
John Johnson, Code 761  
Patricia Johnson, Code 0217  
Robert Kappler, Code 0A  
Terry Keeling, Code 836  
Elliott Kehoe Jr. Code 833  
George Keiper, Code 661  
Delores Kelly, Code 774  
Gary Kessler, Code 85

Robert Kinney, Code 532  
Louis Kizer, Code 0123  
Jesse Kochersperger Jr., Code 835  
Brenda Krivensky, Code 595  
Alfred Langlois II, Code 593  
Robert Leap, Code 752  
Don Leduff, Code 752  
Marcia Litschewski, Code 723  
Sherlene Matthews, Code 595  
Francis Mazzone, Code 741  
William McArn, Code 0231  
Wilton McCabe, Code 636  
Edward McDonough, Code 596  
Stevan McNeill, Code 76  
Joseph Melancon, Code 70W  
Truman Metts, Code 0A21  
Bruce Miller, Code 771  
Robert Mizell, Code 523  
Joe Moran, Code 631  
M. Louise Moran, Code 631  
Merton Myers, Code 772  
Alfredo Navario, Code 562  
Robert Neeley, Code 833  
Drucilla Neff, Code 764  
David Nichter, Code 722  
Deborah Nipper, Code 0219  
James Orlando, Code 856  
Ronald Owens, Code 855  
John Pezzana, Code 762  
Sandra Phelps, Code 0231  
James Pierce Jr., Code 832J  
Jeanne Pinto, Code 595  
Thomas Pittenger, Code 618  
Donald Propst, Code 722  
Shirley Purawic, Code 834  
Patricia Reed, Code 84D  
James Rodenkirch, Code 523  
Lawrence Rogers, Code 723  
Evonnie Russell, Code 656  
Robert Rustia III, Code 593

Judith Salmon, Code 822  
Lou Salmon, Code 0282  
Michael Schelling, Code 773  
Ronald Sheridan, Code 0A42  
Joseph Shevock, Code 843  
Melanie Siegfried, Code 596  
Thomas Lee Sinnwell, Code 761  
Linda Slocumb, Code 0232  
Bonnie Smith, Code 762  
Shirley Smith, Code 783  
Patricia Starke, Code 022  
Lewis Stevens II, Code 845  
Sharon Stine, Code 845  
Robert Stodola, Code 722  
Paula Strobel, Code 0231  
James Strudwick, Code 832  
Donald Szejner, Code 763  
John Tizol, Code 773  
Stephen Travis, Code 595  
Raymond Utz Jr., Code 713  
Suzan Vaughan, Code 822  
Sharon Wagoner, Code 01C  
James Walker Jr., Code 743  
Carole Warthen, Code 0231  
Elizabeth Watts, Code 70D  
James Webb III, Code 67  
Richard Wery, Code 724  
Diane White, Code 836  
Diane E. White, Code 773  
Joyce Ann White, Code 764  
Robert White, Code 83  
Russell Whitlock, Code 714  
David Williams, Code 771  
Marilyn Williams, Code 0232  
Nadine Wilson, Code 70  
Raymond Wilson Jr., Code 854  
William Windle, Code 764  
Jeanie Woo, Code 835  
Lamar Woods, Code 0121

# Putting the 'fun' in CFC fundraising



Photos by Susan Piedfort  
*Kelly Moyer took first place in the chili cookoff, then folks lined up buy chili. The event raised \$72 and the chili pots emptied in record time.*



*Michelle Rehr-Matash promises fun at the CFC kickoff. Rehr-Matash, Beth Fiddie and Arlene Sports were the command's CFC coordinators.*

*The generosity of SSC Charleston employees and a variety of fun-filled events helped the command raise more than \$222,000 for the Combined Federal Campaign.*



*The bake sale raised \$397 for the CFC, and the cake walk brought out the competitive side of some SSC Charleston employees.*





# OA/Fn Experimentation demo a success

The Navy's Open Architecture/FORCEnet (OA/Fn) vision is for Navy shipboard C4ISR systems that are modular, easily and affordably upgraded with new technologies, and able to support interoperable capabilities to joint and coalition warfighters. Interoperability is currently hindered by many different "languages" of various tactical and operational systems used across the air, C4I, space, submarine, surface and USMC domains.

During an OA/Fn experimentation event held at SSC Charleston in September, a Code 50 team led by Ken Ballard successfully demonstrated an open network that consumed data from across all the domains in one environment, helping all warfighters "speak the same speak." Ken Ballard of Code 52 and a team consisting of Mark Hartgrove of Code 635, James Southard (Code 521), Marcus Bradley (Code 524), and Allen Ayers (Code 635), used a hybrid of two existing data models which furnished universally-defined "words" in the various "languages" for sharing information.

The OA/Fn experimentation demo linked the various legacy tactical and operation systems using a hybrid of the Joint Consultation Command & Control Information Exchange Data Model (JC3IEDM) and Cursor on Target (CoT), both "open" technology data models. The team's challenge was to develop and install the interfaces needed to translate the various legacy tactical system messages into and out of the common data model.

Using an application service called WebCOP, they set up a network that consumed data from across the various domains. The Web-based network did not require user downloads. The team also demonstrated the same sharing for an imagery server.

"We were first node to do this over the GIG (global information grid)," said Ballard. "We were able to see what the benefits were."

The system could be a testing ground for new programs to ensure they are OA/Fn compatible, and lessons learned will improve the acquisition process and changes in business practices that will be needed to support rapidly evolving technologies. "The product was built showing technical feasibility, the logistics tail and configuration management," said Ballard.

*"It was very timely to show them a construct that reduced infrastructure on board a ship."*  
- Ken Bible

The team also leveraged SSC Charleston's new innovation program in the process. Abraham Palihan's project demonstrated how to operationalize FORCEnet concepts with existing software. "One of the things that helped us with WebCOP from his innovation project was the link 16 interface. Using that, anyone could see the picture; it was very beneficial," Ballard said.

According to Ken Bible, Code 52 division head, SSC Charleston has the expertise for the OA/Fn endeavor, going back to the distributive engineering plant and Y2K. "We were pointing out potential weaknesses in the Navy ar-

chitecture than could be fixed in advance back then," he said. "This effort challenged us to operationalize those concepts, to figure out what it means to consume services on the net, to combine and compact them in ways the operational Navy finds useful," he added.

"We have heard so much about service oriented architectures and the value of that approach, but until now, precious little had been demonstrated," Bible said. "The OA/Fn demo showed one view of bringing together all the different domains at the data level."

The admirals and commanding officers who witnessed the demo were mightily impressed, according to Bible, because it showed how the Navy can reduce the number of boxes, training and people needed to deliver better C4ISR to the warfighter.

"Instead of bringing hardware and software and the accompanying maintenance, training and personnel requirements, we can use technology to deliver the same capability in a distributed fashion," Bible said. "It was very timely to show them a construct that reduced infrastructure on board a ship. The littoral combat ships will not have lots of people on them, and this helps the crew focus on weaponeering."

Ballard's team followed up the successful demo by hosting the first OA/Fn experimentation working group at SSC Charleston in October. As the SPAWAR lead on the infrastructure design strike team, Ballard is now in a new six-month cycle as the team faces the next task in enabling the cross-domain exchange of tactical and operational information. Building on the success of their demo in September, the team is pursuing the Navy's Open Architecture/FORCEnet (OA/Fn) vision in a way that is meaningful to the warfighter.

# Celebrating culture





# ral awareness

## at SSC Charleston



SSC Charleston celebrated cultural diversity with an awareness day Oct. 12 that featured entertainment, awards, education and cuisine. Clockwise from far upper left, sweet grass artists plied their craft on site; Native American Indian history and story telling were featured; Asian American cuisine was one of several cultural food samplers; SSC Commanding Officer Capt. Red Hoover presented the Careers and the disABLED magazine's 2006 Employee of the Year award to Linda Warner; Matt Rutherford spoke on disability awareness; Shanda Johnson, Donna Murphy, Susan Butler and Gail Silverman spoke on a women's panel; and celebrated Charleston Ironworker Philip Simmons poses with friends in the atrium.



Photos by Harold Senn



# Innovators

## *SSC Charleston employees take the innovation challenge*

Research, exploration, invention and originality are values central to SSC Charleston's engineering and business development. New discoveries, new directions and new attitudes challenge people and enable the command to grow as a business entity and world class engineering organization.

With this in mind SSC Charleston established an innovation program in April to accelerate innovation and experimentation at the command. The innovation effort will "fuel our creative juices and ultimately result in better support to the warfighter," said Mike Kutch, Code 70 department head, when announcing the program. It offers SSC Charleston employees "a chance to do something special," he added. "It is an opportunity for all of you to have time, with funding, to do something great."

The innovation program is part of the command's Balanced Scorecard initiative, particularly the strategic objective to accelerate innovation and experimentation within SSC Charleston. Twenty-six innovation proposals were submitted in June. They were evaluated by the Systems Engineering Group (SEG)/Science and Technology Group (STG) and the Management Steering Group (MSG). The Business Board awarded grants ranging from \$45,000 to \$99,000 to 13 projects in July. The command allocated \$1 million for the program in FY06.

With the requirement to expend all FY06 innovation program funds by Sept. 30, 2006, the teams had to work fast. The SEG/STG monitored their progress and reported regularly to the MSG. Al Emondi, who shepherded and tracked the proposals through the SEG/STG review process, deserves special thanks for his efforts, according to Kutch.

"We still are very much in the learning stages with our innovation program," Emondi said. The lessons learned from the 2006 program were rolled into the 2007 program.

"Many people tie the innovation program to advanced technology development, but there is a significant business piece as well. Initiating or experimenting with new business structures, procedures or business tool development also can be quite novel," Emondi explained. The innovation

program has an engineering excellence track and a business excellence track to allow program managers, contracting and financial personnel to also submit their ideas for consideration.

The FY07 innovation program is currently underway. For more information visit <https://corpweb/cmmi/>.

FY06 projects, proposal authors and department codes were:

### **Inflatable Antenna for UHF SATCOM and MUOS**

*Principal Investigator:*

*Chris All, Code 541*

Ultrahigh frequency (UHF) satellite communication (SATCOM) and mobile user objective system (MUOS) radios will be soon available in smaller form factors for more mobile/portable applications. Currently, UHF SATCOM antennas are bulky to pack and have little gain.

This innovation project was to develop an inflatable antenna for SATCOM and MUOS. The end result was a product smaller and lighter than current SATCOM antennas, which are larger than most handheld radios. An inflatable antenna is not rigid and is more easily packed, and is more durable with fewer rigid parts to break or bend. The new product is more economical since it requires less machining to produce, and fewer mechanical requirements allow for flexibility in electrical design.

The strategy was to use flexible conductive materials that are formed into current antenna designs and sewn into an outer fabric. The outer fabric is held rigid by inflatable chambers sewn to the inside. A manual (oral) inflation tube with a valve is provided so the user can inflate the antenna for temporary use.



Photos by Harold Senn  
**Chris All**



Noninflatable prototype versions of such an antenna are available today using flexible fabrics. Several prototypes of the inflatable antenna were produced by completion of Phase 1 of the project.

## Emergency Information Planning and Response System (EPRS)

*Principal Investigator:*

*Brooks (B.J.) Bowen, Code 523*

EPRS is a process and corresponding planning system utilized to promote flexible planning and response capabilities in the advent of natural (weather or disease progression) and deliberate (biological and chemical hazards, and other impacts of the global war on terror) disasters. The goal of EPRS is to facilitate predictive (proactive) responses to disasters, instead of relying on purely reactive decision making.

EPRS builds upon Geographic Information System (GIS) technology to visualize complex data and close the loop between data and comprehension, trading information overload for enlightened decision making. EPRS extends the Navy's Environmental Information Management System (EIMS) GIS engine technology through the facilitation of planning, modeling and data fusion support for rapid decision makers.

EPRS utilizes several process pillars which include data fusion, predicative response algorithms, template customization/generation and data comparison capabilities. The true power of EPRS is the result of data fusion from a myriad of available data sources fused with customer business and operational rules to create a common planning picture which may be utilized before or after an event occurs. Authoritative federal, state, city and organizational data



**B.J. Bowen**

sources are utilized via Web services to assist in this data fusion. Data from diverse sources are overlaid into a single planning picture and accessible collaboratively from any location.

Predicative response algorithms enable users to make decisions with greater confidence based on user-specific or business rule sets developed by EPRS process owners. User specific templates are also created to allow users to more rapidly access information to address their specific needs. Active data sources are analyzed to ensure high consistency and data fidelity metrics are achieved and unreliable data sources are cached to ensure availability. EPRS consumes available authoritative data from various sources in an service oriented architecture environment and is not a data repository, but does store derived knowledge from these sources for customer consumption. Collaboration tools are also available within the tool suite to facilitate data sharing.

During development, the EPRS team modeled the path of Hurricane Ernesto as it was approaching Charleston in September 2006. The team composed an accurate planning picture which included communication assets, evacuation zones, flood zones, parcel/home values, population density and evacuation shelter locations. This data was combined with example customer business rules to calculate derived knowledge such as flood damage, property destruction and communication network effects (such as cellular phone tower damage). This information is very useful in developing response plans for assisting the population during the event and for staging and prioritizing response efforts.

EPRS team members included Curtis Merriweather Jr., Derik Pack, Mike Shirley and Corey Smith.

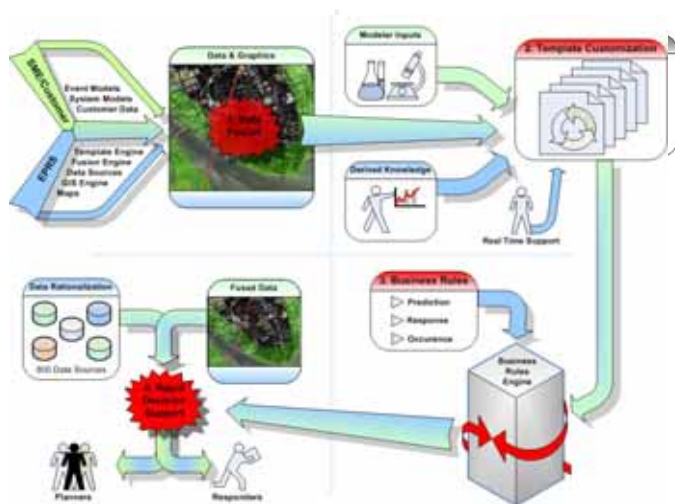
## Program Control Architecture Tool (PCAT)

*Principal Investigator: B.J. Bowen, Code 523*

The PCAT is a process and supporting tool designed to allow program managers (PMs) to utilize DoD Architecture Framework (DoDAF) architectures in conjunction with budgeting and scheduling tools to track the cost and delivery of capabilities to the warfighter. It allows the PM to make budget decisions based on the delivery of capability to the warfighter, rather than in terms of staffing levels of engineering activities.

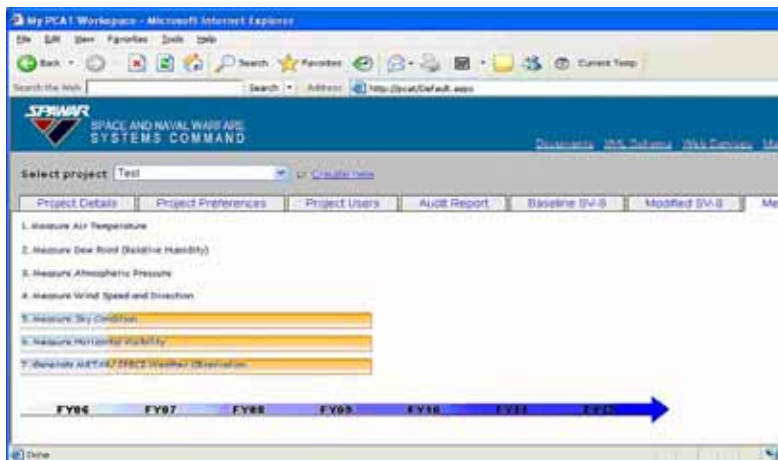
Program managers constantly find themselves trying to tighten a Venn diagram. They must balance their own interests (meeting budget and schedule) against the needs of the warfighter (concern about operational capabilities) and the wants of the engineer (concerns about system design).

PCAT provides a process to help PMs perform actionable decision analysis by fusing operational and system level data. DoDAF architectures provide the Rosetta Stone, translating the two, allowing the warfighter's need for operational capability to be measured against the cost and sched-



*The basic EPRS process*

*Continued on page 32*



**The PCAT tool uses the existing DoDAF architecture and Microsoft Project schedule to show how a project funding change provides a delta in capability delivery. The lower three gray bars represent the time during which the warfighter will no longer have the needed capability.**

ule of engineering efforts. The PM can then make informed decisions about capability delivery and the implications to other externally dependent systems while balancing cost and schedules. The PM no longer views the impact of a programmatic change in terms of reduced manpower levels, increased staffing, or a WBS Gantt chart entry sliding two inches to the right, but instead in terms of the impact to the warfighter and his/her ability to perform a mission.

### Small Craft Alert System (SCAS)

*Principal Investigator: Justin Firestone, Code 856*

The SCAS is an inexpensive, force protection solution that builds on existing surveillance cameras. This project took video surveillance to the next level by converting analog video to digital, then analyzing that converted video for specific, user-defined behaviors. This would greatly enhance a ship's force protection abilities during increased emphasis in this area because of the global war on terror.

Current fielded camera surveillance systems aboard LHD/

LHA-class ships can be integrated with a high-performance personal computer and Vidient Smart Catch 2.5 software to detect small craft entering an invisible perimeter 360 degrees around the

ship. During testing, a camera was aimed and zoomed at a buoy at some distance away. Once the camera focused on the buoy, perimeter behavior was configured using the Vidient Smart Catch 2.5 software. This perimeter was broken many times from different angles by a small craft provided by the Navy. Captured test video was sent to SSC Charleston Code 741 for testing, and image processing algorithms were formulated to aid in the reduction of false positives.

### Mini-RF Threat Warning Testbed

*Principal Investigator: Thomas Kirkpatrick, Code 71*

This project established a mini-testbed for a radio frequency (RF) threat warning network comprised of low cost, portable units. Each unit can detect RF energy, characterize it and provide geo-location information. Individual units communicate as part of a larger network, providing large-scale monitoring, tracking and profiling of signals of interest. Code 715 procured, configured and tested the equipment to provide three systems.

Code 71 supports the U.S. Coast Guard, Army, Marine Corps and Special Operations Forces (SOF) information/cryptologic operations. These warfighters consistently report they cannot field enough systems to meet their needs because of the high cost, size, complexity and security classification of currently offered products. Precision signal-of-interest (SOI) geo-location has been identified by most customers as their number one priority.

This project aimed to verify the ability of low-cost components to satisfy these needs. This shifts the emphasis from large, expensive systems capable of multiple IO/cryptologic functions to small, inexpensive systems focused on collecting signals and determining signal geo-locations. Low-cost components allow fielding more units to create networks with higher densities of netted sensors and can extend the reach of larger, more capable systems. The project characterized and tested the performance of the tuners, 8-way commutator switch, A/D unit, RF modem, GPS and antenna array, particularly the ability to control the functions of each via software. The system was tested for its ability to detect and provide a line of bearing for a test signal to determine its suitability as a direction finding system.

### Using P\_MUL to transmit Navy messages in EMCON

*Principal Investigator: Albert Kunze, Code 522/524*

There is a requirement for shore-to-ship messages to be delivered during emission control (EMCON) situations, when the shore can transmit but the ship can only receive. ACP142 was developed to operate "in bandwidth-constrained and delayed-acknowledgement environments to support efficient allied information transfer." Nexor has developed an appli-

***"... lack of innovation in an organization drastically reduces our valued added to the customer and very much dulls the cutting edge that we ultimately could offer to the warfighter ...."***

***- Al Emondi***



cation to implement ACP142. A test network was implemented, and the Nexor product was tested and found to be satisfactory. Some automation was necessary.

This project is important because the DMS Proxy converts DMS messages to SMIME SMTP messages on the shore. These messages must be transported to ships regardless of EMCON. SMTP does not operate in EMCON; therefore, there is a need to transmit messages in a different protocol.

The ACP142 (P\_MUL) is a message transport which operates regardless of EMCON. Nexor's "TMG" software converts SMTP to ACP142. The ACP142 provides either unicast or multicast addressing. Navy routers are operationally limited to unicast dynamic routing and multicast static routing. Dynamic routing does not operate in EMCON.

This project added an automated failover when EMCON is detected, from unicast to multicast. The failover was added to Nexor's "TMG" software and to ACP142. The project delivered test results of the improved software, Nexor's modified "TMG" software, an operator's manual, three licenses and a draft ACP142 revision.

## LightSpeed

*Principal Investigator: Kenneth McGaha, Code 614*

Warfighters need to be able to communicate during RF jamming while driving in convoys. The development of LightSpeed will fulfill this requirement. Currently LightSpeed is a hand-held pair of binoculars enabling voice and data to be passed between two users. As the device stands, it can not meet the requirement since it must be held by the user, so a solution that enables the device to be mounted without penetrating into the armor is being developed. The goal for the LightSpeed team is to identify a mounting system that will enable the LightSpeed device to mount on most military vehicles without having to permanently mount the device.

The team identified the limitations in mounting the equipment onto a military vehicle, and considered the forces placed on the mount in a convoy and how to prevent damage to the lenses. Each team member offered unique backgrounds that aided in resolving these challenges. The mounts had to be adhered to the vehicle temporarily, allow a full range of adjustment, conform to an 8x8 inch to 12x12 inch installation area, and maintain durability. The project solution provided the LightSpeed binocular with a motion stabilizer, a versatile mounting solution, and it provides convoys a way to chat via voice or PDA. Further development of the LightSpeed will aid in identifying the feasibility of the system in a convoy.

## Chip Scale Atomic Clock (CSAC)

*Principal Investigator: Robert Miller, Code 618*

Advancement in current time standard technology, especially in solid state and miniaturization, have made it pos-

sible to shrink a Cesium Beam tube physics package from a full-size, rack-mounted standard the size of a large thermos down to the size of a pencil eraser. Critical needs for fielded DoD systems cannot be met for communications or time standards which are as large as small refrigerators. Price is also a major issue. In quantities this device with support electronics should cost around \$5,000 instead of the current cost of around \$80,000 for a primary lab standard.



*Robert Miller*

This project investigated customizing the advances from the Defense Advanced Research Projects Agency (DARPA) program into an existing Trident program and leveraging this effort into other DoD areas. The team aimed to standardize the testing of this CSAC by using currently certified Trident test equipment already designed for these type parameters. The team also re-hosted the current test equipment for further streamlining and to save long-term support costs. As part of this project, the team incorporated the CSAC into the current Trident Internal Frequency Standard to take advantage of the existing mature, reliable, stable back-end system support circuitry. They analyzed the mature IFS design of the Hp 5061 and clone circuitry to advance the application development for the new Next Generation IFS, which has been fully funded by Strategic Systems Programs in FY07 and '08.

The project aimed to merge cutting edge technology with mature, reliably-proven circuits to get the same system level performance at a fraction of the cost, while also achieving a more robust design for the warfighter. A final engineering report delivered from the project included all technical data collected and analyzed.

## ACE Data for Distributed Testing and Engineering

*Principal Investigator: Abraham Palihan, Code 545*

Integrating Single Integrated Air Picture/Integrated Architecture Behavioral Model (SIAP/IABM) with a tactical data application service will allow SSC Charleston to demonstrate the ability to provide tactical data in a service oriented archi-

*"New discoveries, new directions, and new attitudes challenge personnel and enable SSC Charleston to grow as a business entity and world class engineering organization."*

*- Mike Kutch*

*Continued on page 34*

ture. This service will be available via a portal or directly via a Web address, thus giving SSC Charleston a capability not currently available.

Utilizing low- to no-cost tools and leveraging the Open Architecture/FORCEnet (OA/Fn) experimentation effort and SIAP, this project aimed to provide greater capability for testing within a distributed tactical data exchange architecture. Integrating the SIAP/IABM hardware and software let the team participate in the tactical environment using their networks and link tools.

The project also demonstrated how to operationalize FORCEnet concepts via existing software and hardware. Utilizing the data provided from the SIAP or any Link-16 interface, the team provided a parser to receive the Link-16 messages. Each Link-16 message populates a data model which is a hybrid of COT (Cursor-On-Target) and Joint C3 Information Exchange Data Model (JC3IEDM). WebCOP, an interactive map continuously updated to reflect the common operational picture, consumed the data from the data model. All that is needed to view WebCOP is a connection and a browser. Ken Ballard managed this portion of the task and tested it successfully during OA/Fn experimentation. NSWC Dahlgren accessed WebCOP as an application service and was able to view WebCOP's Link-16 data over a VLAN via the DEP network. NSWC Dahlgren has built an interface to integrate their OA DDG prototype track data into the COP utilizing the same hybrid data model.

This capability greatly enhances SSC Charleston's testing and engineering capability from a Navy enterprise perspective. Integrating the current tools and applications such as SIAP, IABM, CLIP, WebCOP, and tactical data exchanged via a distributed network environment enables SSC Charleston to participate in future testing and integration initiatives.

## **SYSCOM Architecture Development and Integration Environment (SADIE)**

*Principal Investigator: Lothrop Richards, Code 856*

The Systems Command (SYSCOM) Architecture Development and Integration Environment (SADIE) was established here in 2004 to support distributed development of the Navy Human Systems Integration Enterprise Architecture. The SADIE customer base has grown to include other architecture development projects.

SADIE provides a Web-based, secure, PKI-enabled, single point of access to enterprise architecture applications and information. It includes a suite of DoDAF and enterprise architecture tools that support the shared devel-

***"In the next few years I envision a significant increase in our engineering excellence and an improvement to how we socialize that work with our peers both within and outside our organization."***

***- Al Emondi***

opment of architecture product data. SADIE allows teams to work collaboratively on the same applications and documents regardless of their location, access devices or network connections being used.

Currently SADIE possesses three core functional components: a portal, a CITRIX™ environment and a data repository. The portal provides a secure, Web-based, PKI enabled single point of entry into SADIE and provides architects the ability to post HTML-navigable render-

ings of their architectural products. The CITRIX™ environment hosts the enterprise architecture tools (applications) used for collection and development of architectural products. It is through CITRIX™ that architects choose to leverage metaframe conferencing capabilities, which provides distributed teams the ability to share applications and accomplish distributed product development. The data repository is a Core Architecture Data Model (CADM)-compliant data and metadata repository that facilitates the consistency, correctness and completeness of architecture products across multiple modeling tools from various vendors, with various metamodel implementation variants. The repository auto-configures based on the metadata in modeling tools so legacy data can be easily loaded, analyzed and managed.

This project targeted extending existing SADIE capabilities to meet the requirements of the FORCEnet Integration and Interoperability Management Plan and business transformation objectives of current and future customers within the enterprise architecture and systems engineering communities of interest.

## **Modeling Human Performance and Decision-Making**

*Principal Investigator: Renee Sturgill, Code OE*



*Renee Sturgill*

As Network Centric Warfare moves from concept to reality, analysis is needed to understand how the profile of the future warfighter will be composed of education, training, experience, behaviors and other cognitive capabilities. In the future, key tactical decisions will be made at much lower levels, with both increased technology and reduced manning as drivers. The ability to understand



the future warfighter will be crucial to manning requirements, capability requirements and specifically as an integrated component of a system.

To date, most engineering processes analyze the materiel solutions of doctrine, organization, training, materiel, leadership and education, personnel and facilities (DOTMLPF), leaving an analysis gap of training and personnel with respect to system performance analysis. This project analyzed the “human in the loop” for a model to integrate into materiel system performance models. With this innovation, total system capability can be assessed in terms of both technology and human performance.

Primary activities of the project included researching human behavior and characteristics impacting the human decision process; defining the human decision process with metrics and attributes; building a human decision model in a modeling software package; designing a model experiment with accompanying scenarios, operational views and systems views; and performing analysis on the decision model results.

Ultimately, this project will take a scenario and determine the range of experience, training, characteristics and behaviors ideal for the personnel component of that scenario. The acquisition community can use this model to determine manning requirements for new capabilities in terms of number and type of personnel.

## OA Component Registry

*Principal Investigator:*

*Lt. Cmdr. Gus Weekes*

The Open Architecture (OA) component registry is a software component and product-line based capability registry and capability composition and platform download tool kit. It allows mission software capabilities or entire product lines to be discovered, composed and downloaded to a platform or user. This enables the Navy to proceed with the creation of product lines on demand. The product lines or families can be created from the components in the registry and merged into software product families which may be required for future missions. The capabilities provided will include software component registration, component data usage information such as component data input and output formats required, product line registration (such as C4ISR components, assessment and simulation components, test and validation components, enterprise components, logistics components, etc.)

Network Centric Warfare requires composable mission capabilities and reusable software in order to support force transformation, to reduce deployed software complexity



*Lt. Cmdr. Gus Weekes*

and to reduce cost. The armed services, including the Navy, have adopted the architectural strategy of implementing both the component-based product line architecture and service oriented architectures. There is no current mechanism letting mission users discover, use or compose new functions from sets of components. This will save Navy dollars in software procurement and move closer to the dream of “highly reusable software components.” This project showed that such a registry is feasible and is an economical, technically beneficial solution to providing software capability upgrades to naval and joint applications.

## Ontological Engineering Quantum Leap

*Principal Investigator:*

*Samuel Yaryan, Code 71*

Ubiquitous customer data sharing requirements within the DoD, intelligence, and Department of Homeland Security (DHS) communities have exploded within the last several years and can be expected to continue to grow. SSC Charleston “As-Is:” SPAWAR “Data Engineering” skills and tools are seriously lacking. SSC Charleston “To-Be:” A “quantum leap” of data management/ontological engineering skills and tools in order for SPAWAR to remain relevant to today’s data-intensive environments and challenges.



*Samuel Yaryan*

This project objective was to expand current “data/ontological engineering” skills of government engineers; acquire, train, deploy and leverage state-of-the-art data engineering/ontological engineering tools and techniques; improve and extend customer support levels for current emergent Code 71 data engineering projects; and market expanded skills and capabilities to the new and existing customer base.

The project’s approach was to acquire and install “best of breed” commercial off-the-shelf (COTS) software on “live” project(s); survey state-of-the-art community practices, DoD, intelligence community (IC) and industry guidance and available ISR/SIGINT taxonomies; train the core team on state-of-the-art concepts and tool specifics; develop a prototype SIGINT taxonomy based on community best practices and extending on any existing work; and psychological operations ontology (FY07).

***“The future belongs  
to those who are  
willing to be  
innovative....”***

***- James Ward***

*SSC Charleston supports  
Joint Systems Integration  
Command Interoperability  
efforts on Deployable Joint  
Command and Control at  
USJFCOM Standing Joint  
Forces headquarters*

The Deployable Joint Command and Control (DJC2) suite is “a standardized, integrated, rapidly deployable, modular, scaleable joint command and control (C2) plus collaboration system which contains all the parts and pieces for a joint task force (JTF) commander to plan operations, collaborate on viable courses of action and conduct C2 of his/her forces,” as defined in the program brief.

For accelerated development, and to reduce the risk of interoperability issues as combatant commands augment DJC2 with critical C2 systems, JSIC installed and conducted assessments of GCCS-J 4.0.1 with DJC2 common workstations along with several command and control and support applications.

Melvin Jones, Terry Shatzer and Christopher Thatch. The C2 and support applications included Generic Area Limitations Environment-Lite, Joint Warning and Reporting Network, Global Broadcast Service (GBS), Content Staging, Advanced Field Artillery Tactical Data System (AFATDS) with Effects Management Tool; Commercial/Joint Mapping Tool Kit; Consequences Assessment Tool Set; Joint Automated Deep Operations Coordination System (JADOCS); and Open Source Information System.

The Small C2 Information Package (SC2IP), an implementation of the Everything over Internet Protocol (EoIP) concept, was inserted into the communications path of the DJC2 enclave. With the SC2IP, and the employment of a satellite simulator to incorporate delay and latency associated with a satellite connection, JSIC was able to assess the impact of this communications solution on the reach back capability of service oriented architecture/Web-based applications and information exchange between legacy server applications.

*The DJC2 is a system of systems that is scalable and easily deployed*





***The GBS Next Generation Receive Terminal satellite antenna***

Charleston, JSIC implemented a GBS suite at SJFHQ. Jake Obi of the SSC Charleston GBS JPO Support Office (with the Defense Information Systems Agency's support of the project) provided a GBS Next Generation Receive Terminal (NGRT) satellite antenna and a Receive Broadcast Manager (RBM). This communications suite was installed at SJFHQ by SSC Charleston's Scott Wich, SJFHQ project manager, establishing the NGRT on the roof and the RBM in the network switch room on the fifth floor.

Network integration efforts providing connectivity to the DJC2 suite on the first floor were accomplished by

Ken Edoff and Paul Hill, both of SSC Charleston, members of the SJFHQ network support team. Combining DJC2 with GBS, a smart push/user pull communications capability, as well as content staging (now content discovery and delivery) enabled JSIC to demonstrate a large bandwidth data/content delivery and management capability for the warfighter employing DJC2 at the edge of the global information grid. Although GBS is a baseline component of DJC2, it was only employed for the display of unmanned aerial vehicle streaming video and did not take advantage of its high capacity data transfer capability.

Capitalizing on cross directorate cooperation, JSIC received the dedicated support of the DJC2 operations support center on-site technicians, SJFHQ staff and operators within USJFCOM. Systems installation, integration and assessments were accomplished and many improvements to DJC2 and applications implementation were identified, documented and forwarded to J8 and the DJC2 JPO.

JSIC engineering architecture operations, USJFCOM J65, SJFHQ and SSC Charleston were instrumental in establishing the necessary network connectivity to demonstrate reach back capa-



***The GBS Receive Broadcast Manager***

bility from SJFHQ to JSIC for JADOCS and AFATDS. Network instrumentation efforts, lead by Mark Rodgers of SSC Charleston, provided the necessary means to troubleshoot connectivity issues related to the various applications and to conduct in-depth network performance analysis.

Program office support was provided for many of the applications assessed. These efforts have been instrumental in accelerating DJC2 spiral development and bringing much needed capabilities more quickly to the warfighter.

The DJC2 IASS 06 final report can be viewed on the JSIC SIPRNet Web site <http://www.jsic.jfcom.smil.mil> under publications. Otherwise, call JSIC Operations at (757)203-7522/DSN 668-7522 or email [NIPRNetJSICOperations@jfcom.mil](mailto:NIPRNetJSICOperations@jfcom.mil) ; [SIPRNetJSICOperations@jfcom.smil.mil](mailto:SIPRNetJSICOperations@jfcom.smil.mil).

- Raymond Yarsinske, Code 82A



Photo by Dave Walters



Photo by Dave Walters



Photo by Robert Greer

***From left, Ayodele, Flemming and Johnson receive certificates of completion from Executive Director James Ward.***

## Code 80 New Professionals earn certificates

In a ceremony held Oct. 2 at Naval Amphibious Base, Little Creek, in Norfolk, Va., SSC Charleston Executive Director James Ward presented certificates of completion and letters of congratulations to three graduating Code 80 New Professionals.

Receiving certificates were Falojimi Ayodele and Derrick Flemming of Code 832, and Marco Johnson of Code 845. Devang Topiwala of Code 854 also completed the program. All New Professionals hired by Code 80 in 2004 have now completed the training program.



Photos by Susan Piedfort

## Code 80 hosts Rear Adm. Bachmann

*SSC Charleston hosted the commander of SPAWARSSCOM, Rear Adm. Michael Bachmann, at its Tidewater offices in August. While in the "Navy's capital," Bachmann visited Bldg. V-53 on Norfolk Naval Station, labs at St. Juliens Creek Annex and facilities at Little Creek Amphibious Base. At left, Mark Luther of Code 83*



*briefs the admiral at St. Juliens Creek. At right, John Carvil of Code 84; Rick Pacquin, Code 846 branch head; Bachmann; Jennifer Watson, Code 80 department head; SSC Charleston Commanding Officer Capt. Red Hoover and Robert Greer, Code 84D2 listen to a brief by Robert Zickau, Code 843 in the navigation lab at Little Creek.*

## From the Commanding Officer

*Continued from page 4*

are currently doing to use industry standards for systems engineering, such as ISO/IEC and best practices from CMMI.

Sound systems engineering practices give us command-wide operational consistency that helps us address challenges through improved processes. Good practices help us consider engineering technology, risk management and economic factors as we develop and manage systems that satisfy our customers' requirements. By sharing tools, documentation, templates and other artifacts needed by project engineers, we can implement projects quicker, thus improving our effectiveness and efficiency.

Finally, I would like to thank everyone who made this year's Combined Federal Campaign (CFC) a success, and a special debt of gratitude goes to CFC Campaign Coordinator Arlene Sports of Code 0A5, CFC Contributions Coordinator Beth Fiddie of Code 0C, and CFC Events Coordinator Michelle Rehr-Matash of Code 0C. Thanks to these ladies, the more than 40 key workers throughout our departments, and everyone who gave to the CFC, we were able to raise more than \$222,000 at press time. We can be proud to know the CFC will once again come

through for thousands of U.S. charities that depend on your generosity. Thank you for upholding our solid reputation of supporting local, national and international charities through the CFC.

In the same spirit of helping others, I would like to encourage those of you with excess leave to consider the Leave Donor Program. This is the time of the year to take a closer look at your Leave & Earnings Statement (LES) and see if you can possibly donate any leave before the end of year. And it's certainly better to donate leave rather than to lose it.

Leave donors can designate leave for a particular person, or donate it to the general leave pool for the Hurricane Katrina Victims. Through this program, you can help a co-worker in critical need who has exhausted all sick and annual leave to continue to remain on the payroll. Donating leave is as easy as filling out Form OPM 630A. Please call Torri Jenkins at 218-4164 to offer your leave donation.

This year is over, but our activity level isn't. You have successfully equipped and supported this nation's warfighters both at home and abroad and can be proud of your abilities to rapidly provide critical warfighting capability, while maintaining the highest levels of cost efficiency. As I reflect on another successful year, I wish you and your family a safe and enjoyable new year.



# CMMI® success

Continued from page 6

SCN Program Manager Mike Johnston said his team was elated by the announcement.

"This was a major milestone, but we realize there's much work left to be done," he said. "Using the ML3 model has helped us to strengthen and better document our entire process structure. Our ability to leverage work products across programs has improved. The ML3 process areas fit very well with our tasking to support C4I integration on new ship construction programs."

The goal of the appraisal was to assess the projects' progress toward attaining CMMI® Maturity Level 3.

The appraisal focused on measuring the SCN and JTWS projects in implementing practices for Project Planning, Project Monitoring and Control, Configuration Management, Requirements Management, Supplier Agreement Management, Measurement and Analysis, Process and Product Quality Assurance, Requirements Development, Technical Solution, Product Integration, Verification, Validation, Integrated Project Management, Risk Management, and Decision Analysis and Resolution.

The appraisal team reviewed more than 1,500 documents submitted by the projects.

Additionally, the command's organizational processes of Organizational Process Focus, Organizational Process Definition, and Organizational Training were also appraised.

The SCN team participants were Senior Manager Pete Vandemeulebroecke, Program Manager Mike Johnston and other team members – Rick Fenolietto, Don Bernard, Danny Jenkins, Mike Cullison, Lowell Leopold, Jim DeWitt, Joe Schott, Say Lor, Gary Hinks, Wayde Walker, Kevin Gerald and Kevin Gentry.

The JTWS team participants were Senior Manager Chris Littlejohn, Program Manager Mike Niermann and other team members – Bill Jindracek, Ryan Hyde, Sandy Ellis, Tony Szwast, Fred Flickinger, Linda Warner, Gayle Mitchell, Malcolm Ellis, Ted Burkhardt, Michele Neal, John Dressel, Al Ware, Carel Peacock, Mark Bailey and Annie Sitton.

The teams offered special thanks to Pam Bell and Renee Boltin for their work in Organizational Training and to Enterprise Process Group members John Foore and Jerry Suggs for involvement in Or-

ganizational Process Focus and Organizational Process Definition.

- Beth Meloy, Engineering Process Office

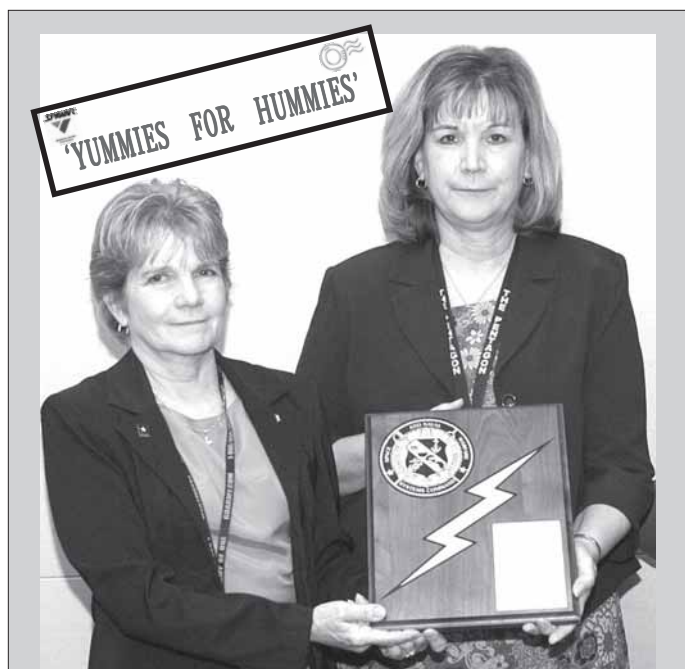


Photo by Harold Senn

## Team earns Lightning Bolt

Code 741's Candy Gray and Jane Dingus of Code 09 accept the SPAWAR Lightning Bolt Team Excellence award Nov. 21 on behalf of the SSC Charleston 'Yummies for Hummies' team, which organized and packaged 1,700 pounds of treats and necessities into care packages for warfighters.

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# SSC Charleston to collaborate with local universities

SSC Charleston will work with state universities and the South Carolina Research Authority (SCRA) to connect SSC Charleston-generated ideas with university-sponsored senior projects. An SCRA Web site called FlightLink will host the collaboration.

Many SSC Charleston personnel have ideas for interesting projects but often do not have the time or resources to accomplish them. Universities are always looking for ideas for senior projects. FlightLink makes them a perfect match. SSC Charleston personnel can submit ideas to FlightLink, students and professors at state universities can choose the idea for a senior project, and the three can discuss how the idea can be made into a student project. Once everyone has agreed to the details, the idea submitter mentors the student during the course of the semester.

Anyone can submit an idea for a university senior project which can be done by the student within one semester. After creating a login at the FlightLink Web site on the SCRA server, an idea submission form, procedures document and a feedback questionnaire are visible. After downloading and completing the idea submission form, it should be reviewed by a branch head or senior division staff member. Since this is a mentoring program

idea submitters should consider how many projects they are willing to support concurrently and note that

number in the submission template. SSC

Charleston idea submitters are expected to work with the students during the course of the project. The completed idea template then goes to Security, Public Affairs and the SEG. The SEG will look over the idea and recommend improvements in the submission or ask questions to enhance its clarity.

The submission is then uploaded to the FlightLink Web site, along with an idea title and a short abstract describing the idea. Precautions are being put into place to protect intellectual property rights. Participating universities sign an agreement supporting joint ownership of intellectual property rights with the government. The abstract, which is searchable by all interested students, should not include specifics. Only professors who have signed the property rights agreement will have access to the full submission.

Once SCRA receives the idea submission, the file is moved to a common area. If a professor or his students find an interesting idea, the sponsoring professor will make contact to work out details relating to the project. Support can be provided to students via email, phone or VTC on a regu-

lar basis. Backup points of contact are recommended in the event the idea submitter is unavailable at any time during the project. No money will be required for this program other than what is required to support the idea submitter's time. At the end of the project, students may be invited to SSC Charleston to present their project at a technical briefing. Support details for these trips are being worked out with SCRA. A feedback questionnaire completed at the end of the project will document how the project went and recommend improvements in the process.

This is a valuable endeavor in many respects, according to Tom Kirkpatrick of Code 71. "First, we supply ideas to the universities to help them come up with practical senior projects. At the same time, we have access to young, energetic and creative minds that we may never have contact with otherwise," he said. The universities learn about what SSC Charleston is and what its people do, and students who may be interested in working at SSC Charleston upon graduation or as a co-op also learn about the command. "We may even be able to keep some of our brightest minds in state, helping us to improve products for our military," Kirkpatrick said.



He recalled that as a test a few years ago Code 71 contacted a professor at Clemson to see if he was interested in supporting a pilot program like

FlightLink. The professor was very interested in the concept, liked the idea submitted and agreed to have three of his students work on the idea as a senior project. "Carel Peacock and I met with the students and the professor to work out project details and subsequently met with them via VTC every two weeks over the course of the semester," he said.

At the end of the semester, the students and the professor came to Charleston and presented their findings at a Friday technical briefing. "I believe it is safe to say that everyone who attended the presentation was extremely impressed with the quality and professionalism of the students," said Kirkpatrick, adding, "As a side benefit, two of the three students are now working at SSC Charleston in Code 71 and continue to do great work."

Specific details on the website address are forthcoming in an official FlightLink kick-off at SCRA and at an upcoming Friday Technical Briefing.

For more information call Tom Kirkpatrick at 218-4840 and visit the SCRA Web site at [www.scra.org](http://www.scra.org).





*The SSC Charleston's GBS team proudly displays their Lightning Bolt awards.*

Photo by Harold Senn

## *Hard work pays off for GBS ISEA team*

The Global Broadcast Service (GBS) underwent a complete technology upgrade from September 2004 to June 2006, transitioning from Asynchronous Transfer Mode (ATM) to Internet Protocol (IP).

Led by Pat Ward, the SSC Charleston Navy GBS ISEA team was a key player in the successful transition. The efforts of the GBS Team (PEO-170, SSC Charleston, SSC San Diego and Naval Undersea Warfare Center) led to a "Lightning Bolt" award from Commander, Space and Naval Warfare Systems Command Aug. 30 in San Diego. Jorge Reyes, GBS APM, asked Ward to accept the award on behalf of the GBS Team. Charleston's GBS team is part of the new Transformational Communications Branch, Code 543.

GBS is a wide-bandwidth, high data throughput (23 Mbps) Joint satellite communications system. Installed in submarines, surface ships and expeditionary teams, these systems provide fleet and strike group commanders with a real time, broad bandwidth satellite receive capability. All Navy GBS systems provide two data enclaves, one classified and one unclassified. The

audio, video and data products received include: environmental information, tactical imagery and Predator UAV video.

Key contributions of the SSC Charleston team to the transition were noted as instrumental to the effort. The team established a PITCO test facility that fully tested 79 each AN/USR-10 and 32 each AN/TSR-9 GBS receive suites, while fielding nearly 20 East Coast systems. They tested and upgraded over 150 supporting KG-250 crypto systems, and fielded all Atlantic Fleet shipboard (12) and expeditionary (five) backfits.

The SSC Charleston team developed and established a multi-site configuration management system utilizing the Top Vue software database. They assisted in development and execution of an aggressive installation schedule to backfit 75 ship, submarine and shore GBS ATM systems to GBS IP during a six-month period.

They coordinated weekly integrated product team meetings among all players to ensure installation schedules were met and potential problems were identified, addressed and solved. They coordinated an Integrated Products Team

(IPT) with the primary contractor (Raytheon) to resolve technical issues to ensure systems were available on time and in working order.

Charleston team members assisted in the highly successful proof of concept on *USS Peleliu* (LHA 5) for a PEO C4I and Space Acquisition Decision to procure the systems.

They developed and standardized installation and testing procedures for all surface, submarine and expeditionary installation teams to use in IP transition. There have been no major casualty reports on any of the currently fielded IP systems.

Charleston team members receiving the award were Pat Ward, Phil Cooper, Fred Cupo, Crystal Gathers, Joe Holtby, Mike Moody, Kevin Nunn, Aaron Ross, Lee Stubbs, Buck Wagner, Adam Wolf, and industry partners Jack Belcher, Jim Clark, Lee Dennison, Joey Forbes, Robert Granger, Jeff Greaves, Wayne Ishmael, Marc Jacobs, Mark Jeffcoat, Joe Molinari and John Sumter. Gathers, Stubbs and Wolf are now assigned to other SSC Charleston projects.

*- Eric Herrman, Code 543*

## *Admin Council provides common processes, rules for Code 80 operations*

The Tidewater C4ISR Department stood up in December 2003 and was the combination of all SSC Charleston Tidewater-based branches and divisions formally in departments 30, 50, 60 and 70. This was a major task in itself since SPAWAR's Tidewater workforce was located across a 40- to 50-mile radius with facilities in Norfolk, Portsmouth, Suffolk, Virginia Beach and Yorktown.

Soon after the dust cleared, and the nearly 400 civilian employees were re-assigned to their new codes, the Code 80 Administrative Council was established in February 2004. The mission of the council was to standardize all administrative functions and processes across the department, and provide administrative personnel with an environment that includes education and training, mentoring, communication, and teamwork. Since then it has evolved into all those things and more.

Now the members, which include both government and contractors, enjoy a problem-solving round table, gripe session, and "mini admin day" celebration at each monthly meeting. The members have become a tightly-knit group who can call each other for help or guidance. One member lives in Charleston and acts as the council's eyes and ears and keeps all paperwork for Code 80 flowing smoothly between Charleston and the Tidewater area. Thanks to this effort, the council has established an efficient process for routing all Code 80 documentation by

streamlining many processes to avoid unnecessary delays.

Since the beginning, council members realized common standardization was vital in order for Code 80 to run successfully. They adapted CMMI methods to define and evaluate all common administrative processes, such as correspondence, time-keeping, personnel actions, training, travel and check in/out procedures. These administrative processes had to be common in terminology, style, and had to avoid waste due to poor time management, inconsistencies and redundancies. Through dedicated teamwork, the Admin Council developed efficient and effective CMMI formatted standard operating procedures (SOPs) to cover many of the common processes within the department. It was a monumental job involving many rewrites to get past the formidable Branch Head Council! But the task was completed and the SOP's are now posted to the Code 80 NetCentric Warfare Government (NCWg) Web site for easy access and reference.

Several members of the Code 80 Admin Council participate in other Code 80 department councils and boards, such as the Branch Head Council, New Professional Council, Training Council and Kaizen events. The Admin Council's involvement with other Code



Photo by Clint Van Marter

*Code 80 Administrative Council members are, from left, back row, Cathy Steiner, Suzanne Oker, Connie Stanton, Debbie Van Marter, Collette Williams, middle row, Debbie Vissar, Janice Singletary, Jessica Kiehl, seated, Jackie Wills, Gertie Lawrence and Dianne Busby. Not pictured are Debbie Follin, Tom Jeans and Reanie Walters.*

80 councils and boards offers face-to-face interaction which leads to solving immediate issues concerning administration.

Training is an important issue within the council. In the past they have invited individuals to meetings to cover topics such as the use of NCWg, SLDCADA and how to prepare personnel actions. They have also been briefed on SPAWAR security issues and safety. Work Shaping and Acceptance (WSA) and Lean Six Sigma were also addressed. The council has been involved in several Lean Six Sigma events and briefings, including one with SPAWAR headquarters covering documentation and correspondence dissemination within SSC Charleston. This covered the cradle-to-grave process of obtaining senior management signatures required for any particular documentation. The event earned the council members their Yellow Belts. They will also be involved in ongoing and upcoming Kaizens which will address issues such as NMCI, personnel action processing and signature authority, to name a few. The council is currently creating training plans and goals for FY07. So far they include COR

*Continued on page 44*



# Bike commuters leave gas guzzlers at home

The price of gasoline has taken a dip lately, but transportation is still one of the largest costs within a household. Department of Labor statistics show transportation costs exceed food, education, recreation and medical care costs for most Americans. The American Automobile Association (AAA) estimates it costs \$7,967 a year to operate a medium-sized sedan an average of 15,000 miles.

Growth in the Tri-County area has resulted in more congestion, stop-lights, roadside and airborne pollution, and fewer smiles from behind the windshields of car commuters.

There are a handful of SSC Charleston employees who aren't too troubled by this situation. They ride bicycles to work – from as far away as Goose Creek, Summerville, West Ashley, James Island and the Isle of Palms — saving gas dollars and getting a great workout at the same time.

Nina Carnright, Ferris Stewart and Dan Yohman ride in regularly, Carnright from Goose Creek, Stewart from the Isle of Palms and Yohman from West Ashley. Carnright started bike commuting last year. She has been cycling since discarding the training wheels for a “two wheeler” as a child. She could drive to work, taking I-26 for a white-knuckle stop and go, or taking 176 and Redbank Road past 12 traffic lights, three schools and three train crossings.

Instead, she rides her bike. “It takes about 45 minutes or so,” said Carnright, of Code 0A41. She tries to ride her bike in four days a week, weather permitting, and even does a few laps around her neighborhood circle beforehand.

Most people would need a really good reason *to* do this. Carnright said she can't find a reason *not* to. “The distance is not too far and there are no bridges to cross over,” she said. There are shower facilities in the building and, of course, there's the gas savings.

“I use the time to myself to think about what I want to do when I get to work or home. Or, I just don't think about anything,” she said. Riding has increased her cardiovascular endurance, and with three teenagers Carnright said she needs all the energy she can get to be a band mom, swim mom, cheer mom, and so on.

“Mostly I just enjoy being outside during my commute,” she said. “I like the idea of going at my own pace. The mornings are quite peaceful since I leave early enough to avoid any real traffic. The afternoons are a bit more hairy with more cars out and about. A lot of people wave or



Photo by Harold Senn



Photo by Susan Piedfort

***Ferris Stewart and Nina Carnright, left, and Dan Yohman, above, use muscle power instead of gasoline on their commutes.***

honk as they drive by. I don't mind it too much, at the very least, it confirms that I am actually visible to motorists.”

Most bike commuters say they can better appreciate the scenery and beauty of the area on a pedal-powered ride. Carnright described a surreal interlude with a deer one morning. “I saw him in the distance just standing there, and as I got closer I think I startled him,” she said. Then, as the deer began to gallop alongside her, she thought he might buck her off the bike. “After a while he made a quick turn toward the bushes and disappeared into the forest.... I thought, ‘Wow, that was really cool!’”

Ferris Stewart of Code 531 has been biking for 15 years. For him, the commute in a car just doesn't compare to riding his bike to work. “Most people are driving in their cars to work, doing the same old thing,” he said. “It is amazing how close my house is to work,” he said of the 20-mile ride. “Usually the first question is ‘How do you get from the Isle of Palms to the Weapons Station South?’ It's really about two miles closer by bike, and the view from the new Cooper River Bridge is spectacular from the bike path.”

Stewart rides with the Coastal Cyclists group, and has done several Century (100-mile) rides. In 2005 and 2006 he completed the Assault on Mount Mitchell, which runs from Spartanburg, S.C., to the highest peak in eastern North America (excluding island summits), about 25 miles north of Asheville, N.C. The 102-mile ride has 1,500 vertical feet of mountain climbs and is known as the granddaddy of mountain endurance events. It is the fourth most difficult bike ride in the U.S.

*Continued on page 44*

## Bike commuters

*Continued from page 43*

Cycling is just one part of Stewart's physical fitness lifestyle. "I cycle to cross train for running and speed skating. I am running a lot right now and entering various runs," said Stewart, who at the time was looking forward to the Marine Corps Marathon.

Dan Yohman of Code 6611 has been a bike commuter ever since he worked at SPAWAR headquarters in the early 1970s, then at St. Inigoes, and now at Charleston. He rides about 20 miles from West Ashley, via downtown, to his worksite at the former naval base. Besides enjoying the sight of dolphins in the river, the smell of honeysuckle and jasmine, and the smiles and waves from pedestrians and front porch sitters, Yohman has picked up numerous wrenches, screwdrivers and sockets along his route. He noted that when he rides his bicycle, "I create no pollutants, consume no nonrenewable energy, make no noise pollution, and provide health benefits for myself." He said the bike offers great stress relief but doesn't isolate him from people and the environment.

More important than the fitness benefits, the joy of being outside and the gas savings is the need for cyclists to stay safe. "The more you act like another vehicle, the safer it is," Yohman said, noting that statistics show that a bicyclist dramatically increases the chance of getting hit by contradicting the traffic flow. "The only time I have been hit was when I was pulling out of a driveway and was hit by another bicyclist coming the wrong way down the sidewalk," he said. "If I had been in a car, the results would have been him on the ground instead of me!"

When Carnright rides her bike, she assumes she is invisible to others. "Always assume drivers do not see you. This is probably the best advice," said Carnright. Keeping

in mind that motorists aren't always paying attention has prevented several close calls for Carnright, who admits going through a helmet or two, and now wears one with a light clipped to the back. "I know of a couple of times a helmet has saved me from a severe head injury," she said. She wears high visibility biking clothes day and night, usually bright, technicolor designs with yellows and oranges.

Stewart agrees that the safety gear is a must. "I always wear a helmet when I ride," said Stewart. "I look directly into a driver's eyes and make sure that he looks at me to make sure of his intent," he said.

Besides money saved at the gas pump and fitness advantages, there are less tangible benefits to bicycle commuting, the three bikers agree. "It just makes me feel good about myself," Carnright said. "And if I can motivate others to do it, that makes me feel even better. It's always nice to be a positive influence on others."

Any kind of fitness activity, Stewart believes, can make a dramatic change. "Change your lifestyle

by incorporating some time in your day or week for you. Start slow and do a little bit each time you work out to change from a sedentary life to a more active life," Stewart advised. "Putting one step in front of another seems so average, but can lead to running marathons or the Mount Mitchell ride in cycling. The personal satisfaction and feeling you will have eclipse anything anyone can say to you."

"We at SPAWAR are blessed with not only flexible working hours that allow us to fit bike commuting into our schedules, but also with shower facilities at most locations," said Yohman, who years ago had to wash up in the sinks at SPAWAR headquarters in Crystal City, Va. "If I, at my age, can commute 20+ miles (each way) a couple of times a week, I encourage/challenge you younger folks to give it a try."

- Susan Piedfort, Chronicle Editor

**"It is amazing how close my house is to work .... It's really about two miles closer by bike, and the view from the new Cooper River Bridge is spectacular ...."**

***Ferris Stewart***

## Code 80 Admin Council

*Continued from page 42*

training, and courses in Microsoft Office, professional development, leadership and finance.

"One of the biggest challenges in standing up a new department in the Tidewater area was the institution of a uniform set of business rules which would govern the branches and divisions which were, only months earlier, part of four other departments," said Code 80 Department Head Jennifer Watson. "The Admin Council, without direction from senior leadership, quickly took

on this task and within a few short months was able to develop and deliver common processes and business rules for subsequent Code 80 departmental operations. The council remains as proactive today as when they first started and we, the employees of the Tidewater C4ISR Department, owe so much to this dedicated group!"

After two years of regular meetings, the council has made great strides in meeting their mission, and looks forward to many more years of camaraderie and success.





Photo by Harold Senn

*Visiting math and science teachers from Charleston, Berkeley and Dorchester counties at SSC Charleston for the*

*command's MaST program gather in front of the engineering center with their host, Odette Foore, far right.*

# Ma<sup>th</sup>Science & T<sup>echnology</sup>

## SSC Charleston shows educators careers in engineering sciences

A week-long Math, Science & Technology (MaST) program was held at SSC-Charleston during the educators' summer break. The program gives middle and high school math and science teachers from Charleston, Berkeley and Dorchester counties an inside view of the technologies of SSC Charleston. The goal of MaST is to help teachers relate real world experiences to math and science and encourage their students to pursue careers in these areas.

Hosted by Odette Foore of Code 70, the educators toured a variety of facilities and learned about SSC Charleston programs involving air traffic control, Antarctica operations, satellite communications, networks, nanotechnology, special exploitation engineering and corporate production.

Culminating the week was a presentation by SSC Charleston Commanding Officer Capt. Red Hoover. Noting the strong requirement for engineering sciences worldwide, the captain emphasized how SSC Charleston contributes to the critical area of warfighter knowledge superiority. "Command and control is vital in warfare," he said, "and we have seen that command and control of troops in an urban environment is very difficult. There are lots of capability problems we try to solve every day."

Noting the erosion in math and science among young people today, the captain lauded the efforts of the teachers to stimulate interest in technology. "We need bright kids interested in math and science and engineering," he said,

adding that in the near future, young people who want to enlist in the Navy will need at least two years of college because of technological advances across the board.

With more than 100 SSC Charleston employees in Iraq at any given time, Hoover highlighted programs developed here that are saving warfighters' lives and improving their quality of life, such as the hundreds of Internet cafes that provide much-needed links to home.

American eighth grade students ranked 15th in a recent international study of math achievement, according to the Trends in International Mathematics and Science Study (TIMSS). By the time they graduate from high school, they score near the bottom of all industrialized nations. Meanwhile students in countries like China and India are excelling. China will graduate four times the number of engineers as the U.S., while Japan, a country with less than half the U.S. population, will graduate double the number of engineers. According to the Department of Labor, the number of jobs requiring math and science is soaring four times faster than overall job growth.

Angelo Stambolis, a former NASA engineer who worked in the Apollo program and is now a math teacher, said the SSC Charleston MaST program well illustrated the importance of science and technology to national defense and the warfighter. "It was great to walk around SPAWAR and see it all. The presentations were great," he said.

# *Certified mediator is one of ADR options*

The Navy provides Alternative Dispute Resolution (ADR) services for its employees. Although there are many forms of ADR, the most common one in workplace disputes is mediation.

Conflict is a normal part of our lives, but can be very uncomfortable, particularly in a workplace setting. If you find yourself in a dispute with an employee, manager or other colleague, mediation can help you resolve issues in a private and timely manner. Mediation is an informal process that uses a neutral, third party to facilitate the parties' resolution of the dispute.

The Department of the Navy provides certified mediators to assist employees and supervisors. The mediator has no power to make a decision, or force one on any party. Instead, the mediator works with all parties to reach a voluntary agreement of their own making. You can get more

information on workplace mediation at the Navy's ADR Web site, <http://adr.navy.mil>. To help decide whether mediation is appropriate for your dispute, consider whether the case involves continuing relationships, whether you want it settled privately and informally, and whether you want to have a say in how the resolution and agreement are shaped. Parties can represent themselves and/or have a representative with them. Since the mediation process is voluntary, any party can end the proceeding at any time.

Our ADR coordinator for the Human Resources Service Center Southeast is Adolph Delgado, who can be reached at DSN 868-2498, commercial (228) 871-2498, or at [adolph.delgado@navy.mil](mailto:adolph.delgado@navy.mil). SSC Charleston employees can also contact Angela Williams, Deputy Equal Employment Opportunity Officer, at (843) 218-5688, DSN 588-5688, or [Angela.Williams2@navy.mil](mailto:Angela.Williams2@navy.mil).

## Navy Enterprise Resource Planning (ERP) heading our way

Our Navy Enterprise Resource Planning (Navy ERP) implementation effort is getting underway for Team SPAWAR. For those who are unclear about Navy ERP and the importance of its implementation, here's some background. ERP is an integrated, on-line software system with modules for specific business functions. Among the benefits of implementing an ERP system are the automation and integration of business processes that enable the sharing of common data across the enterprise.

The Navy ERP architecture not only provides an integrated data environment (from a single point of entry), but also provides a near real-time view of all aspects of the organization's business situation. Team SPAWAR can tightly integrate data across traditional functional business lines such as finance, procurement, human resources, project management and inventory management. Our legacy systems cannot deliver all that is required by the Navy enterprise. With the high cost of upgrading these aging systems, it is no surprise that the Navy has mandated, and set a high priority for, our implementation of the Navy ERP. A memo signed by the Vice Chief of Naval Operations states, "The successful implementation of Navy ERP is not an option, but a necessity."

Team SPAWAR's implementation of Navy ERP, scheduled to "go live" in April 2008, will allow us to meet compulsory controls and reporting requirements, operate more efficiently and effectively, and provide more timely information to our project teams, program sponsors and the Navy. Team SPAWAR is fortunate to benefit from the expertise and experience available as a result of SSC San

Diego's Cabrillo ERP pilot. The Cabrillo ERP pilot continues to provide a tremendous return on investment for Team SPAWAR. We accomplished a fully integrated business system and reengineered 122 business processes to make them more cost effective and user-friendly. Metrics have consistently proven the overall efficiency and cost effectiveness of ERP.

Navy ERP deployment activities have already begun! In August 2006 we had a highly successful Navy ERP familiarization meeting at SSC Charleston. From January to June

2006, more than 150 Team SPAWAR personnel were involved with the Navy ERP roles review and validation effort, a time-critical requirement prerequisite to system testing. SPAWAR was singled out as being the leader in this effort.

SPAWAR's senior leadership strongly supports, and is committed to, a successful Navy ERP implementation. We realize that the most important commitment needed for success is from YOU. The level of success we achieve will be a direct result of

your involvement and willingness to accept the changes associated with Navy ERP. Changes will occur across the organization at all levels, and we need you to be prepared for these changes.

How can you prepare for this change? By partnering with your SPAWAR ERP teammates as they work diligently to equip the organization. The SPAWAR Corporate ERP Team will be ramping up communications and activities for the implementation. Take note, get involved, and step up to the plate to become a SPAWAR champion for Navy ERP.

- Rod Smith, SPAWAR Deputy Commander

*"We realize that the most important commitment needed for success is from YOU."*  
- Rod Smith





U.S. Navy photo by Paul Farley

*Aircraft carrier USS Theodore Roosevelt (CVN 71) heads to sea after a stop on Crete earlier this year.*

## *SPAWARriors embark on 'Big Stick'*

Bearing the name of our 26th president, she stands tall and proud against a backdrop of the setting Virginia sun. Her 1,092-foot-long frame extends back to gently touch the horizon. Capable of managing an air wing of 85 and displacing close to 100,000 tons, she truly epitomizes the "Big Stick." Speaking softly, her mere presence deters potential hostile actions. When forced to raise her voice, she does so with gusto; launching up to four aircraft nearly simultaneously. The F-18 fighter, the EA-6 radar jammer, the eyes in the sky Hawkeye ... she carries tools for any occasion.

Standing only a few hundred feet away are a group of scientists and engineers from various U.S. Navy commands. Some are rookies, others are experienced, all are mesmerized by her grace, beauty and poise.

It is here; on these docks in Norfolk, Va., that CVN-71 (*USS Theodore Roosevelt*) graciously opened its decks to a group of civilians to experience life at sea, observe current technology at work under-

way and to see how the work done in the office and in laboratories correlates to the everyday life of the warfighter. Our escorts were Lt. Cmdrs. Felix Martinez and Eric Lovett, our group sponsor Combat Systems Officer Cmdr. Bruce Urbon, and our activities and events were coordinated by ETC Jacqueline Figgins.



Photo provided

*Representing SSC Charleston among embarking scientists and engineers were Rhett Myers, Code 661, and Myke Payne, Code 663, second and third from right, respectively.*

That first evening was spent learning the layout of the ship. Each room of the ship, no matter the size, is given a number designator that tells exactly where that room is located: the first is the level/deck of the ship; the second the frame number which tells how far from the bow or stern; the third is how far port or starboard from centerline; the fourth is the type of room. This system makes it easy to find any room even on a ship as big as CVN-71.

With most of the crew not arriving until sunrise, the evening was spent on the flight deck taking in

*Continued on page 48*

## CVN-71

*Continued from page 47*

the sites of the harbor and ship alike while listening to the stories of Lovett's Navy experiences. Upon waking the next morning, the ship was bustling with activity in preparation for departure. Before noon CVN-71 and its Coast Guard escort was on its way out of Norfolk harbor. The transition was so smooth our group wasn't aware the ship had left the dock until walking up to the hangar bay later.

The main activity for the first day was a precision anchor drop. One of the U.S. Navy's largest ships would place one of its 60,000-pound anchors within just feet of a targeted spot on the sandy bottom. Located in the ship's forecastle, the two anchors consist of 12 shots of chain, each over 1,000 feet long. Each individual chain link weighs 360 pounds. The ability to place such an enormous object with such precision is an impressive feat. This was not the computer enhanced guidance system that accompanies weapons systems, this was about a dozen ballast mates using verbal relays, a sledge hammer to remove chain stoppers, and simple mechanical and hydraulic aids to help control rate of descent. With a staggering display of teamwork and efficiency, the anchor reached its mark within the given range. After hauling up and washing off the anchor, it was time to proceed to the open ocean.

That evening as the sun started to set, it might be thought that the ship activities would start to set as well. But

CVN-71 is a creature that never sleeps. As dinner began, so did the evening's main event. The primary mission for CVN-71 was carrier qualifications and that would be impossible without pilots to qualify. Those pilots, it seems, heard about the lobster and steak being served in the wardroom below, and were lining up to land. Armed with hearing protection and a camera, our group climbed up to the 9<sup>th</sup> deck "Vultures Row" to observe. With aircraft stacked out for miles, the aircrew on the flight deck, the controllers in the carrier air traffic control center (CATCC) below, and the air boss in the tower were in seemingly flawless harmony as planes began to land one after the other, hardly more than a minute between landings.

Over the next few days, the carrier engaged in flight operations from 11:30 a.m. until 2 a.m., as pilots were required to perform daytime and nighttime landings. During the days our group spent time touring the different areas of the ship, speaking with the crew, and developing an understanding of shipboard operations and technological needs.

Afternoons were spent with our escorts touring some of the more sensitive areas, such as the bridge or the combat operations center. Evenings were spent watching flight ops. Aircraft catching the number four wire seemed about to slip right off the edge of the deck before coming to a complete stop; the bolters missing the wires completely drug the hook across the deck creating a shower of sparks; the flames of the afterburners giving color to the black night ... it all seemed something for Hollywood. It



U.S. Navy photo by PH3 (AW) Michael D. Cole

***An F/A 18 Hornet launches off the flight deck of USS Theodore Roosevelt (CVN 71).***



***An F-14D Tomcat launches from the CVN 71 flight deck during night ops.***

U.S. Navy photo by PHAN Javier Capella



was more than real and the aircrew handled it all with ease and grace.

On the last full day aboard ship, the group separated to revisit areas of the ship that related to what we do on shore. For the two SPAWARriors that meant heading off to the CATCC. The afternoon found us suited up in jackets, helmets and out on the flight deck. Standing on the catwalk over the open water, we stood breathless as an F-18E/F Super Hornet launched from a catapult not 50 feet away.

That evening the two SPAWARriors were invited back to the CATCC where we were allowed to sit, listen and observe the air traffic controllers talk the pilots through nighttime landings. We were given extra headsets and allowed to listen to the radio chatter between ship and aircraft. The level of cooperation and trust between pilot

and controller was amazing. The only problem on the voyage was a blown tire on C-2 landing, and that was resolved and flight operations resumed in less than 20 minutes.

The following morning it was time to leave. Unfortunately the ship didn't have the same agenda and was nowhere near the vicinity of a port and not everyone in the group was a strong swimmer. Fortunately there was a C-2 arriving with the next group of scientists and engineers who would replace our group. Now after watching countless planes take off from the bow of the ship, it was our turn. The distance from the catapult to the end of the deck never seemed that short until realizing that we were about to be shot off it at over 100 miles an hour in about 2.9 seconds. In the C-2 cargo plane passengers sit facing backwards and are forced forward against the harness straps during the fastest and most intensive few seconds of takeoff.



Photo by PH3 Chris Thamann

***A Sailor working on the flight deck brings an aircraft into launch position aboard USS Theodore Roosevelt.***



U.S. Navy photo by MC3 Nathan Laird

***An F-14D Tomcat performs a fly-by past the bridge of USS Theodore Roosevelt (CVN 71). The F-14 officially retired in September 2006, after 32 years of service to the fleet.***

they can find.

Aboard ship, safety is paramount. Proper protective gear is worn at all times in dangerous areas of the ship, and all rules are carefully obeyed and strictly enforced.

The flight back to solid land gave ample time to look back over the last few days. It has been said that a ship at sea is a city unto itself, and CVN-71 was indeed an ever-bustling metropolis. The hospitality of the CVN-71 crew made this a trip that will never be forgotten.

It was truly an honor to experience a glimpse into life at sea. In addition to the T-shirt, ball cap and photo from the ship's store, I returned with feelings of inspiration, respect and pride. The experiences shared as part of this Scientist-to-CVN program will now accompany me throughout my career.

*-Myke Payne, Code 663*

ever, a little 10-cent screw that gets sucked into the intake of an engine can ruin a million dollar aircraft or a take a priceless life. The aircrew regularly gathers at one end of the flight deck, extends in a straight line to cover the entire width, and walks down the entire ship picking up each and every loose object

# OPSEC *demystified*

Recently, there have been several reports of SPAWAR employees talking openly about their work in public areas such as airports.

Though our employees are proud of their work and support to the warfighter, their pride may inadvertently place our customer in danger when vulnerabilities are disclosed to others. Just the knowledge of a technology being deployed into operational environments may lead an adversary to exploit our technology. If we use the principles set forth in our operational security (OPSEC) program we can defend against the disclosure of critical information.

Within the Navy, the odds of making it through boot camp without hearing “Loose Lips Sink Ships” are improbable. Though the slogan is old, it still embodies the basic principle of OPSEC. OPSEC uses a multifaceted concept to prevent the inadvertent compromise of sensitive or classified activities, capabilities or intentions. OPSEC involves a relatively simple, five-step process:

**Identify critical information.**

The information you have that could assist an adversary in any way.

**Analyze the threat to that information.** Does an adversary have the capability to collect or use the information and if so, how?

**Analyze the vulnerabilities.**

How is the critical information relayed in the course of your daily duties and how is it protected?

**Assess the risk.** How likely is it that the information could be compromised?

**Develop countermeasures.** What can you do to protect the information from being disclosed?

These steps should be taken from the adversary’s perspective. To catch bad guys and defeat their attacks, you have to think like one. OPSEC requires the active participation of everyone, regardless of his or her rank or job.

OPSEC is a combination of people knowing what information is considered sensitive and knowing when to keep quiet. I have often seen engineers go to extreme lengths to protect information about surprise birthday parties and promotion lists, yet they discuss details of their work freely and openly with little regard to their environment.

One of OPSEC’s worst enemies is convenience. Making the job efficient may increase productivity, but easier isn’t always better. The path of least resistance, while the easiest

to travel, usually offers the least amount of protection. The combination of secure communications and physical security, if used consistently and properly, greatly reduce the risk of inadvertent disclosures.

Walking to another office to speak face-to-face with someone is more secure than talking on a regular phone. When this is not possible, secure communication equipment includes secure e-mail, telephone and fax machines. Whatever method is used, engineers should hold conversations using a secure medium. These procedures are put in place for a reason. If the information is not instantaneously

available to you then it’s shouldn’t be readily available to a potential adversary. Follow these simple guidelines to mitigate most if not all risks:

- Avoid talking about work away from the office.
- Be aware of your immediate surroundings at all times and who is in the area.
- Don’t talk about specifics of work outside of work.
- Keep in mind that what is not being said can be information in itself.

The mere fact that a person is trying to talk around a subject will actually raise interest in what is being said and could give clear direction for someone to focus their attention.

Just because a person has a clearance for certain levels of information

does not necessarily mean they have the need to know that information. Communication comes in many forms, not just verbal and written. Routines and habits also need to be considered with OPSEC in mind. What seems innocent or insignificant can in fact be a piece of a much larger puzzle.

A classic example is the increase of pizza delivery at the White House and Pentagon prior to the onset of Operation Desert Storm. A good naval example is when a ship is returning from deployment. When the leadership breaks out the steak and lobster, the crew knows bad news is on the way, perhaps having to stay out three more weeks. We need to think three or four layers down.

SPAWAR is full of bright, energetic employees who serve the warfighter everyday in exceptional fashion. Just keep in mind that your actions, both inside and outside the work place, may cause harm to those you serve even though you may only be proud of your work.

- Lt. Brian Phillips





# STILO support can make products better

Personnel from the Office of Naval Intelligence (ONI) information operations division visited SSC Charleston recently to provide information and to understand our capabilities for warfighter support. At the conclusion, one ONI visitor commented, "It is inspiring to see an organization so dedicated to warfighter support; SPAWAR's efforts are truly heroic."

The visit helped build relationships, demonstrated SSC Charleston capabilities and showed how we can engineer systems utilizing the newest threat and technical information.

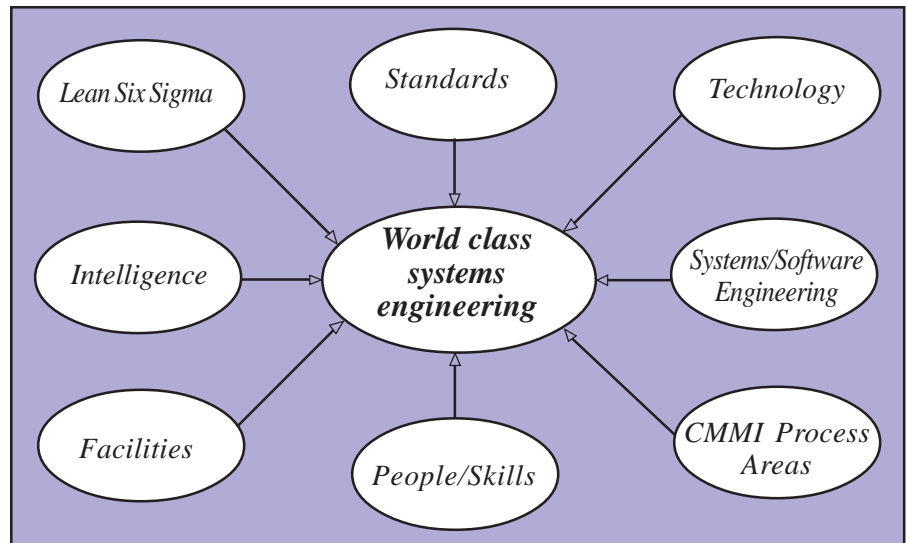
As the SSC Charleston Science and Technology Information Officer (STILO) I coordinated the visit with the support of Mike Kutch, Bruce Carter, John Mildner, Code 72, the Command Liaison Office and the Integrated Product Center (IPC) staff who gave tours and briefs.

STILOs provide a single point of contact to the intelligence community (IC) from the acquisition community. When programs and projects require foreign threat information or data on foreign capabilities or risks to countering our systems, STILOs know who to contact to find the information programs. This ensures systems have a "build to" standard based upon the latest intelligence and knowledge of risks to their development. STILO support costs nothing to programs but the time required to make an inquiry.

Engineering world class systems requires many inputs as demonstrated in the figure at right. Of special significance is the intelligence input. Often engineers do not realize how to use intelligence. By ignoring this input, warfighters may inadvertently be placed in harm's way. For instance, if intelligence support finds that an adversary operates utilizing frequency hopping but a program/project manager doesn't realize this, the results in combat could be catastrophic.

Because Code 72 personnel were able to demonstrate a high level of capability and significant contributions to information assurance (IA) throughout the Department of Defense (DoD), ONI personnel agreed to bi-monthly video teleconferences to discuss current DoD threats Code 72 can consider when engineering IA products. Prior to the September meeting at SSC Charleston, ONI personnel observed risks to systems at customer sites but there was no mechanism to communicate this. Now that dialogue will occur. Interestingly, many of the attendees shared common acquaintances throughout the DoD.

The key to this success story was Code 72's ability to effectively communicate their vital role in the DoD as IA



engineers. Communicating a division's role is the most important mission for the acquisition community to foster effective working relationships with the IC. The IC has limited resources and needs to understand SSC Charleston's role to direct enough resources to the right place so there is value added from the information products they produce. Without understanding SSC Charleston's important role, the IC could focus on another command they see as filling the bigger role in the DoD.

Another benefit of the dialogue demonstrated to ONI is that SSC Charleston can deliver capabilities to ONI that no other organization can. Simply put, ONI is another agency SSC Charleston can support as a business partner, and can link us with other agencies needing our capabilities.

The highly successful visit showed that ONI can provide information to help SSC Charleston deliver better systems and products to the warfighter. SSC Charleston divisions should strive to help their counterparts in the IC understand who they are so that resources can be equitably distributed.

The STILO can provide support to SSC Charleston personnel with a valid secret or SCI clearance and a legitimate need to know information. SSC Charleston personnel should not discount the IC as a potential customer. To make world class systems, intelligence must be utilized as an input to the process. The IC is a business partner.

As the SSC Charleston STILO I can guarantee you great customer service. Not every instance requires my action but I've been trained and can direct you to the right place or get you the information you require. If you have a programmatic need do not hesitate to contact me at 218-3983.

- Lt. Brian Phillips



Photo by Susan Piedfort

## U.S. Representatives Weldon, Brown visit

SSC Charleston hosted U.S. Representative Curt Weldon (R-PA) of the 7th Congressional District, and U.S. Rep. Henry Brown (R-SC) of the 1st District, for a visit in August. A senior member of the House Armed Services Committee, Weldon was particularly impressed with SSC Charleston's work on Up-Armored Humvees for the Marine Corps. Pictured at left with one of the Humvees are, from left, SSC Charleston Commanding Officer Capt. Red Hoover, Weldon, Executive Director James Ward, Brown and Retired Marine Corps Maj. Gen. James Livingston, Congressional Medal of Honor recipient.

## CAFB leaders get insider view of SSC Charleston

Col. Steven Harrison, vice commander of the 437th Airlift Wing at Charleston Air Force Base, left, and Col. Nicholas Desport, commander of the Mission Support Group, settle in for an SSC Charleston command brief from Capt. Red Hoover, right, in the command briefing theater Sept. 19.



Photo by Susan Piedfort



Photo by Harold Senn

## Arms control training held

Captain Robert Vince, director of the Naval Treaty Implementation Program, visited SSC Charleston in September to give training on the Navy Arms Control Compliance and Implementation Program. The brief was attended by Naval Weapons Station tenant command representatives and local Coast Guard officials, as well as SSC Charleston personnel. A tour followed which included the IPC lab, the aXiom product tool, Common Submarine Radio room, wireless communications lab and other areas. Pictured at left, from left, are Robert Miller, Code 618; Vince; Ricardo DiNatale, treaty implementation analyst; and Tamara Killian, of the Strategic Systems Programs legal office.





Photo by Susan Piedfort

## Veeck provides good fun

Above, Charleston RiverDogs President and Owner Mike Veeck entertains SSC Charleston leadership workshop attendees. Part owner of six baseball teams, Veeck told of his success and failure at “putting the fun back into baseball.” One of minor league baseball’s most successful owner-operators, Veeck recounted stories to illustrate his philosophy that fun, creativity and passion are essen-

tial to business success. SSC Charleston Commanding Officer Capt. Red Hoover donned his RiverDogs ball cap to present Veeck an SSC Charleston ball cap and plaque. After his presentation, Veeck remained to sign copies of his book “Fun is Good.” The leadership workshop was sponsored by the Workforce Optimization Team.



Photo by Harold Senn

## Congressman Wilson visits

Congressman Joe Wilson of the Second District of South Carolina got a first-hand look at the capabilities of SSC Charleston during a recent visit. Above he listens to a command brief in the briefing theater. While in Charleston, the Congressman also attended the Federal Executive Association’s Employee of the Year luncheon.

## Duryea visit continues dialog on future sub requirements

Capt. David Duryea, PEO Subs, PMS-435, Electronic Warfare and Electronic Imaging, visited SSC Charleston in September for briefs which were a follow-up to a previous visit by Richard McNamara (SES Executive Director-PEO Subs) and a visit by Dr. Stephen Jarrett and Bob Miller to the PEO Subs office at the Washington Navy Yard. Duryea gave an extensive brief of the PEO sub requirements and current and future challenges for submarines in electronic warfare and electronic imaging. The briefings and tours of SSC Charleston’s labs identified the areas in which the command could contribute now and in the future. Pictured above, from left, are Dr. Stephen Jarrett, CTO Code 70; Capt. David Duryea; Robert Miller, Code 618; John Skutnik, NUWC, Undersea Warfare (USW) Combat Control Product Area Di-



Photo by Harold Senn

rectorate (CC PAD), Imaging and Electronic Warfare Customer Advocate; Monica Hallisey, NUWC, Imaging Technical Design Agent (TDA), Representative; Steven Stump Chief Engineer PMS 435, Imaging and Electronic Warfare.

## The Final Word



### Camo goes digital

*The recent trend toward digital (pixelated) camouflage is now being seen on mobile Internet cafes designed and installed by SSC Charleston to connect deployed warfighters with friends and families at home. Testing sponsored by the Office of Naval Research showed that*



*observers with a visual acuity of 20/20 or higher and normal color vision consistently took more time to detect a target in digital camouflage than the traditional camouflage. Camouflage pixelated patterns are now being seen on uniforms, weapons, vehicles and aircraft.*

## Chronicle photo contest brings out the shutterbugs

Twenty-six high quality photos taken by 12 SSC Charleston amateur photographers kicked off *The Chronicle's* first photo competition. From serene landscapes, busy city shots and nature scenes to close ups of flora and fauna, the photos proved SSC Charleston's employees have considerable artistic talents in addition to their professional abilities.

The entries were evaluated using a point system that considered such factors as composition, lighting, technical quality, originality, artistic creativity and overall appeal. Scoring revealed a very close contest. The winning entry, shown at right, edged out six other photographs by only one point.

A special thanks is extended to all who sent in their photographs for the contest. Those whose photos were not selected this time who would like to resubmit the photos for the next competition can resend them for consideration.

Thanks to the generosity of the SSC Charleston Employee Services Association and MWR, the contest will continue as long as entries are received. Winning photos will appear on *The Chronicle's* inside back page.

All SSC Charleston government and contractor employees can enter. So get out your camera or photo album and send us your best shot!



## Still want to receive The Chronicle in the mail?

More than 1,000 issues of *The Chronicle* are mailed to readers around the world four times a year by dedicated SSC Charleston mailroom personnel. We reluctantly recognize the possibility exists that some no longer wish to receive it.

If you are receiving *The Chronicle* in error, or would rather view the full color online version at <http://sscc.spawar.navy.mil>, just send an e-mail message to [susan.piedfort@navy.mil](mailto:susan.piedfort@navy.mil), or a quick note by U.S. mail to *The Chronicle* Editor (OA5SP), SPAWARSYSCEN Charleston, P.O. Box 190022, North Charleston, S.C., 29419-9022, or give the editor a call at (843) 218-4973.



*And the winner is...*



Rainbow Hilton, Honolulu, Hawaii

Rich Porter, Code 752

Send us *your* best shot

**We are now soliciting photography submissions from SSC Charleston employees for *The Chronicle* spring issue photo contest.**

**The Employee Services Association will offer the winner a choice of a coffee cup, thermal mug, command coin, cookbook (if available) or \$5 credit toward another logo item.**

**MWR will offer a free lunch in the Cooper River Cafe to the winner.**

**Judges are Command Photographer Harold Senn and Chronicle Editor Susan Piedfort.**

**Send your best shot to *william.senn@navy.mil* or *susan.piedfort@navy.mil*,  
or drop your print by the photo lab or *Chronicle* office.**



# *Patriots' Day observance*

*9.11.2006*

**SPAWAR**



*Systems Center Charleston*



*Never Forget*